MARCH 10, 1945

Railway Age

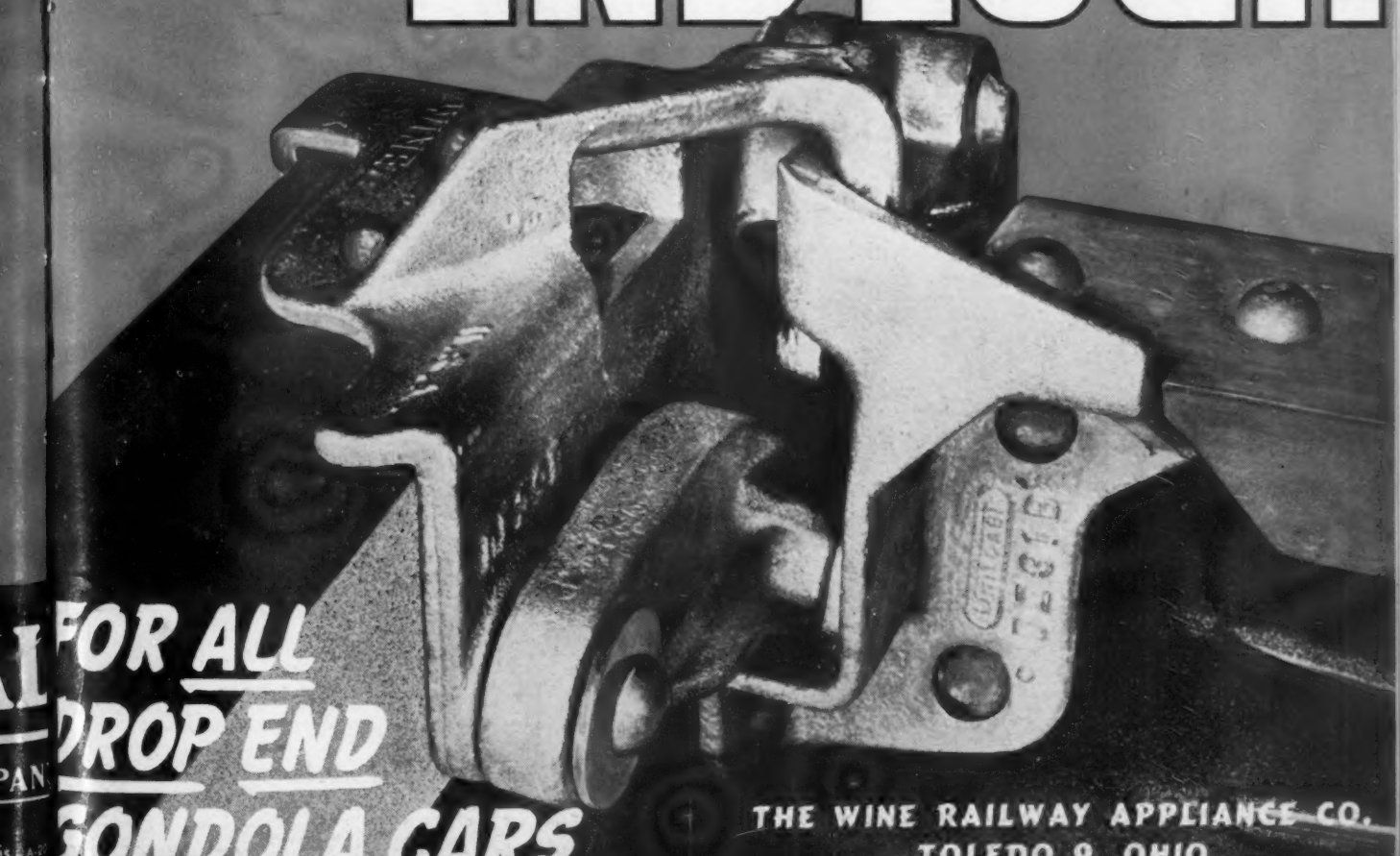
Founded in 1856

THE LIBRARY OF CONGRESS
SERIAL RECORD
MAR 20 1945
COPY
GIFT

Interlocking

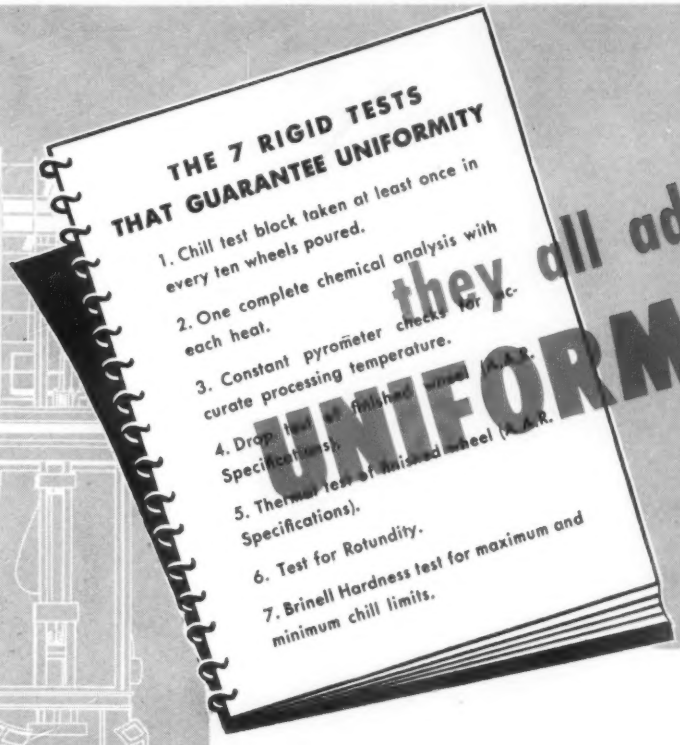
WINE

DROP END LOCK



FOR ALL DROP END GONDOLA CARS

THE WINE RAILWAY APPLIANCE CO.
TOLEDO 9, OHIO


THE 7 RIGID TESTS
THAT GUARANTEE UNIFORMITY
1. Chill test block taken at least once in every ten wheels poured.
2. One complete chemical analysis with each heat.
3. Constant pyrometer checks for accurate processing temperature.
4. Drop test of finished wheel (A.A.R. Specifications).
5. Thermal test of finished wheel (A.A.R. Specifications).
6. Test for Rotundity.
7. Brinell Hardness test for maximum and minimum chill limits.

they all add up to UNIFORM WHEELS

• These seven tests translate an aim into an accomplishment. As a firmly-established part of the AMCCW Code of Practice, they assure all railroads of chilled car wheels which are uniformly good.

One by one, in previous advertisements, we have pointed out the purposes of individual tests . . . emphasized the thoroughness with which they are carried out . . . mentioned some of the fields such as optical pyrometry and micro-photograhy which have contributed to this thoroughness.

This series of tests illustrates the high standards to which our member manufacturers subscribe and to which they must adhere in order to remain members. The end-result of such adherence is product uniformity — a practical aid to today's railroads in the great wartime job they are doing.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

230 PARK AVENUE, NEW YORK, N. Y. • 445 NORTH SACRAMENTO BOULEVARD, CHICAGO, ILL.

Organized to achieve: Uniform specifications — Uniform inspection — Uniform product

39

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 118, No. 10.

MINER

Friction Draft Gears

STURDY IN CONSTRUCTION

POSITIVE IN ACTION

ABSOLUTELY RELIABLE

W. H. MINER, INC. CHICAGO

MT. VERNON CARS

Mt. Vernon is out to win, not only in the great battle of wartime transportation, but in the production of *new* cars that will give American railroads a headstart on the road to peace-time prosperity. Located in an area of adequate labor supply and equipped with the most up-to-date facilities, Mt. Vernon shops are today meeting the railroads' most exacting requirements.

PORTER
"Better Built"
Equipment
Established 1866

MT. VERNON

Division of **H. K. PORTER**

Factories: Pittsburgh, Pa. · Blairsville, Pa.

Out to win!

MT. VERNON CAR DIVISION:
Complete Line of Freight Cars

LOCOMOTIVE DIVISION:
Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.

PROCESS EQUIPMENT DIVISION:
Complete Line of Chemical, Food, and Petroleum Refinery Equipment.

QUIMBY PUMP DIVISION:
Screw, Rotex, Centrifugal, Chemical Pumps.

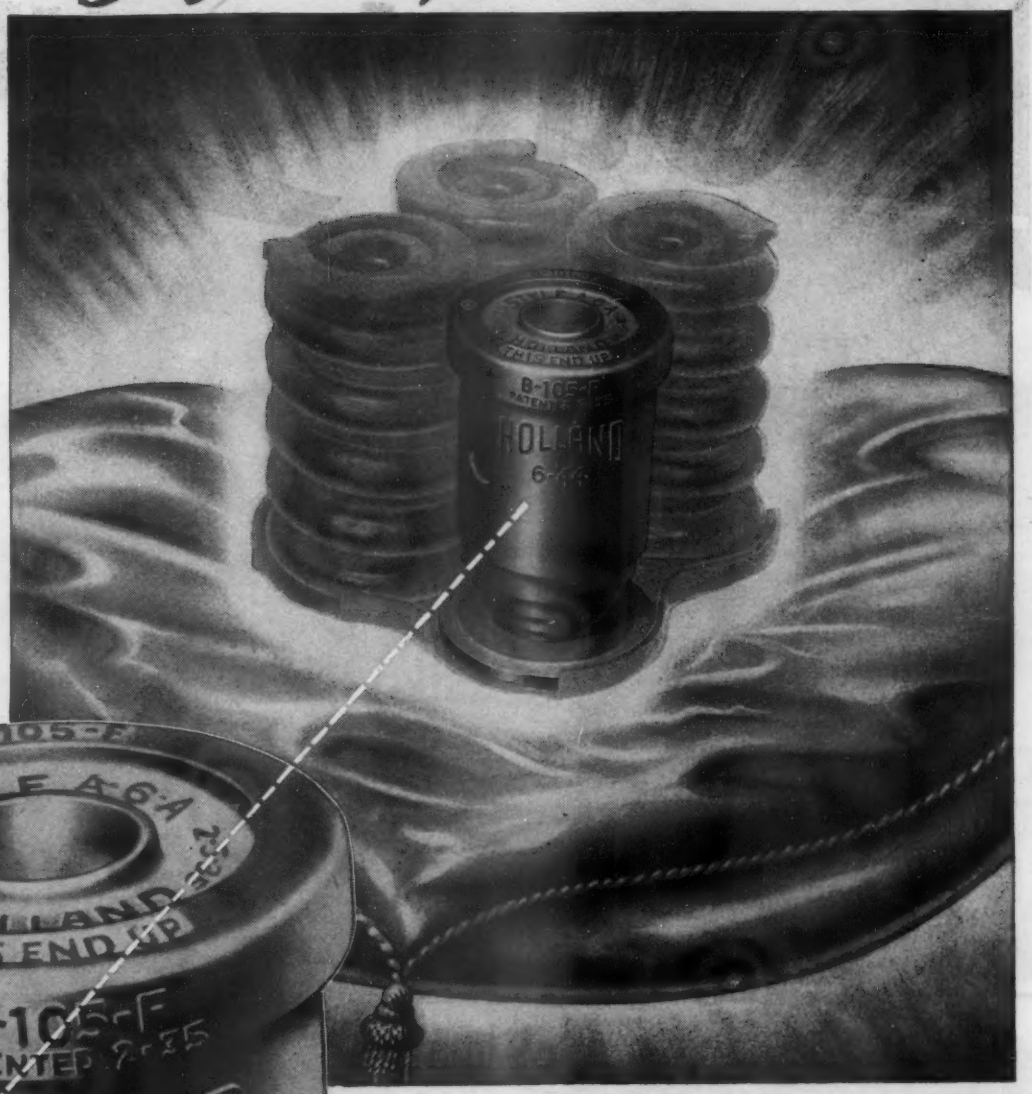
ORDNANCE DIVISION:
Projectiles, Heavy Forgings, Breech Blocks, Winches.

CAR MFG. CO.

COMPANY, INC.

Mt. Vernon, Ill. · New Brunswick, N. J. · Newark, N. J.

Soften up THE SHOCK!



Signal Corps Photo 782

Style A-6-A Holland *Volute* Snubber Springs

Spring Groups, too, suffer from "shock"—the constantly hammering blows of war-time loads and speeds. Easing these shocks on many a car today are Holland Volute Snubber Springs.

Uncle Sam Uses Volute Springs on Many Tanks

HOLLAND COMPANY

332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

HIGHBALL FOR TWO G.I.'s

Friend, there's a lot more to railroading than ballast and steel track and locomotives. It takes warm hearts and understanding heads to make these things come alive—to pour real, human feeling into the kind of wartime job U.S. railroads are doing.

There was that night down in Richmond—

A couple of worried G.I.'s were aboard old No. 14 on the Richmond, Fredericksburg and Potomac as she pulled out at 12:20 p.m. for Washington. They had to catch a 3 p.m. train out of the nation's capital to get back to camp on time.

Sure, No. 14 was due in Washington at 3, but that didn't leave a split second for changing trains. At best it would take something like a miracle to bring her in on time, for war meant a longer train, a heavier load, and crowded terminals.

The G.I.'s braced Pat Williamson, conductor. Pat put it up to Engineer George K. Miller. George Miller said yes, he'd do his best.

He did, too, and at 1:35 p.m.—right on time—No. 14 pulled into Fredericksburg, just halfway. She rolled on time into the big U.S. Marine base at Quantico. But down there on the platform were enough Marines to take a beachhead—and tons of baggage to be loaded with them. That cost five minutes, which seemed an hour to the G.I.'s sweating it out.

George Miller poured it on, and old No. 14's locomotive puffed and strained. Then, there ahead, was Alexandria, five minutes ahead of time. Passengers, mail, and baggage were piled aboard like mad. George Miller took her out on time, picked up five minutes before heading onto Potomac Bridge.

Touch and go it was now as the engineer found the signals set against crossing the Potomac. But he rolled on quickly as they changed and then, just two minutes shaved from schedule, brought her into Washington at 2:58 p.m.

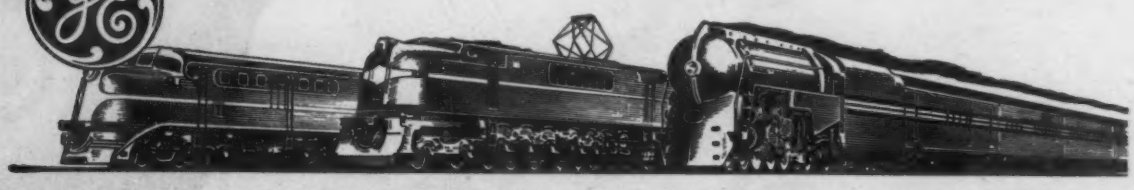
Two G.I.'s hit the platform on the double-quick and, thanks to a fine engineer, made their train for camp.

*—The Trackwalker**

* * *

Alco GE

Thirty Alco-G.E. 660-hp units, in operation more than three years on 10 different roads, have shown substantial reductions in average operating costs per locomotive-hour. The result is a good return on the investment because of low maintenance, fuel, and engine-house expense.

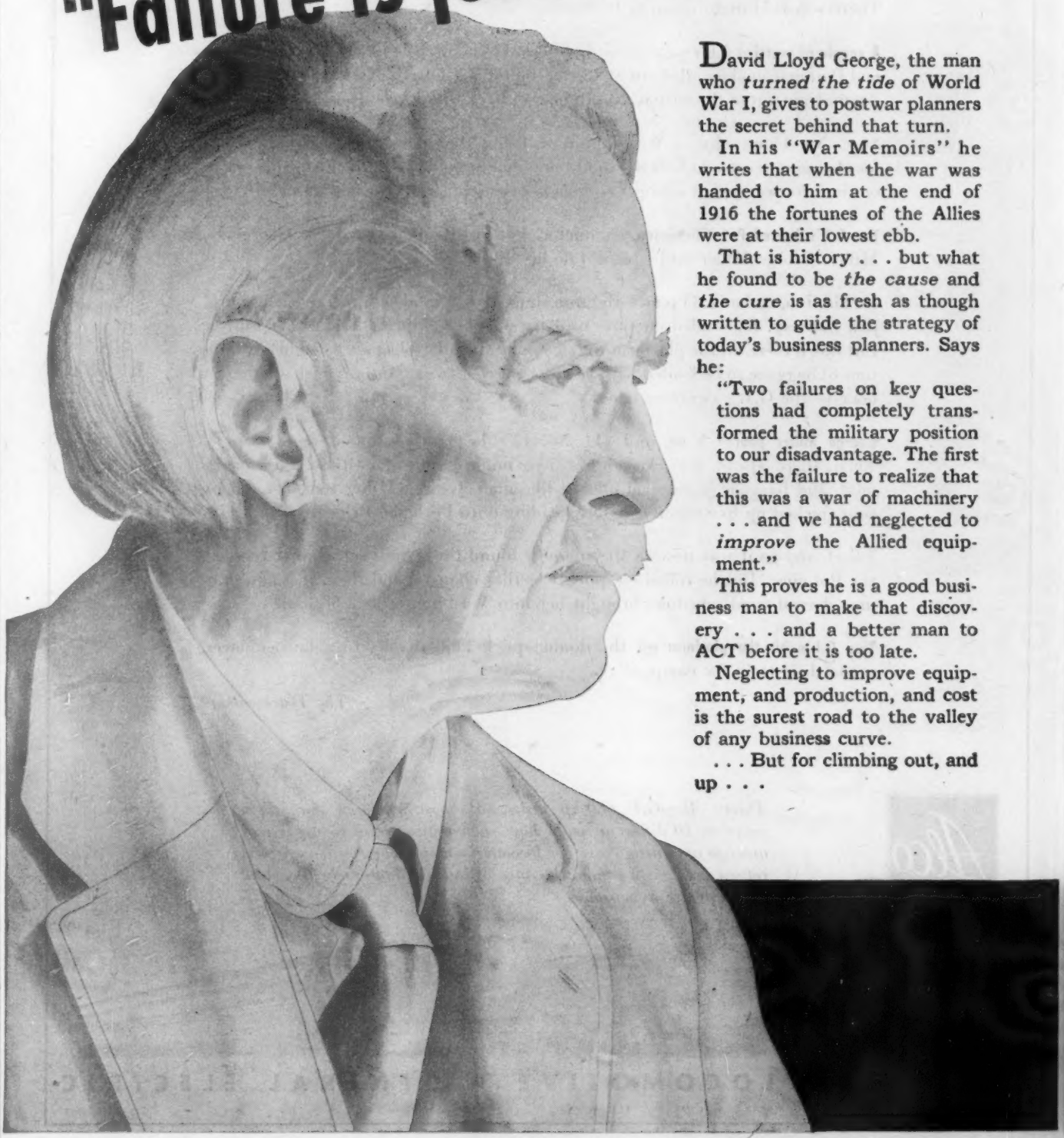


AMERICAN LOCOMOTIVE • GENERAL ELECTRIC

Copr., 1945, American Locomotive Company and General Electric Company **Reg. U. S. Pat. Off.* 113-123-8000

then he said to himself

"Failure is just a symptom"



David Lloyd George, the man who *turned the tide* of World War I, gives to postwar planners the secret behind that turn.

In his "War Memoirs" he writes that when the war was handed to him at the end of 1916 the fortunes of the Allies were at their lowest ebb.

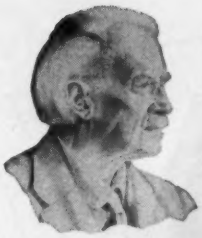
That is history . . . but what he found to be *the cause* and *the cure* is as fresh as though written to guide the strategy of today's business planners. Says he:

> "Two failures on key questions had completely transformed the military position to our disadvantage. The first was the failure to realize that this was a war of machinery . . . and we had neglected to *improve* the Allied equipment."

This proves he is a good business man to make that discovery . . . and a better man to ACT before it is too late.

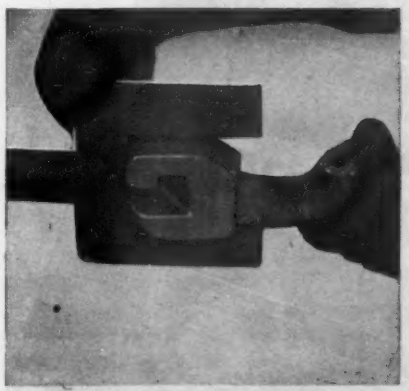
Neglecting to improve equipment, and production, and cost is the surest road to the valley of any business curve.

. . . But for climbing out, and up . . .



"IMPROVEMENT...the key," *he says*

LOOK, "L.G.", how by recourse to Arc Welding a midwestern railroad shop simplifies maintenance of equipment . . . . provides the key to *lower costs:*

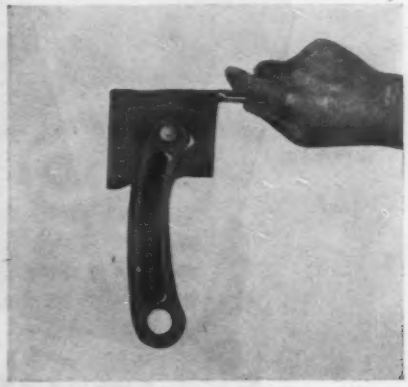


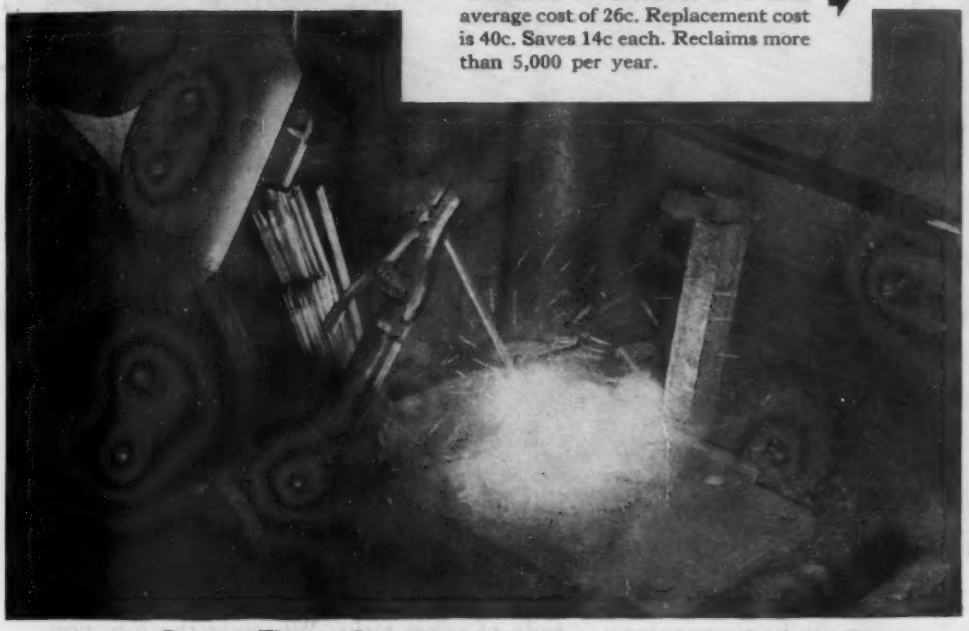
SAVES $1.42 PER LOCK BLOCK

Worn surfaces of this coupler part are built up about ¼" with "Fleetweld 7" Electrode, weaving a bead of two passes. Repair cost only 26c. Replacement cost $1.68. Saves 84%.

SAVES 54% PER LIFTER

Ends of coupler lock lifters, worn as shown by gauge, are built up with "Fleetweld 7" Electrode at a total average cost of 26c. Replacement cost is 40c. Saves 14c each. Reclaims more than 5,000 per year.





SAVES $4.46 PER CENTER PLATE

When cracked, casting is repaired with "Fleetweld 5" Electrode. Repair cost is about 1/3 replacement cost. Saves $4.46 per part.

Lincoln Railroad Welding Engineers will gladly help you make similar savings.

THE LINCOLN ELECTRIC COMPANY, Cleveland 1, Ohio

THE LINCOLN ELECTRIC RAILWAY SALES CO., ***Railroad Representative, Cleveland 13, Ohio***

America's greatest natural **recourse**

ARC WELDING

★ EXIDES— ON THE TRAINS OF TODAY...

MUCH has been told of the improvements that America's railroads have planned for tomorrow—increased speeds, greater safety, and added comforts and conveniences for passengers. Some of these innovations will be electrical—storage battery operated—calling for high and sustained power.

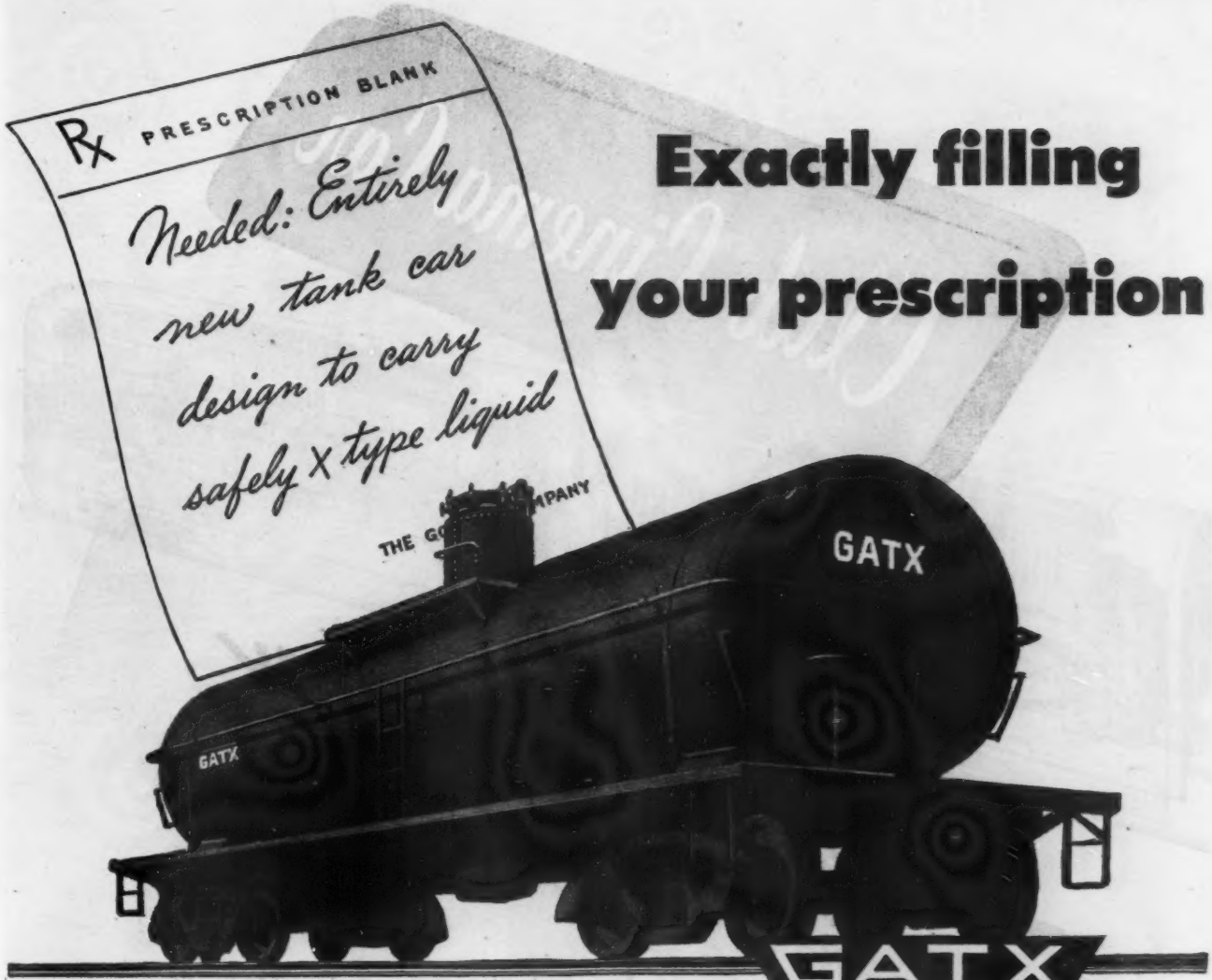
Exide Batteries will be on many of tomorrow's finer trains, performing efficiently and economically, and with ample power to meet the newer demands. Today, powerful, rugged Exides are lighting and air-conditioning passenger cars, cranking Diesel engines, powering train telephone and signal systems, and supplying current for a multitude of other tasks. Whatever the job, you can count on Exides for dependability, long-life and ease of maintenance.

ARMY E NAVY

Exide BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32

Exide Batteries of Canada, Limited, Toronto



Exactly filling your prescription

A NEW INDUSTRIAL CHEMICAL may be part of your present planning. It may never have been carried in bulk before, may present serious transportation problems.

Yet—General American engineers will design the exact type of tank car needed to carry your chemical—at the right temperature, right pressure, and with its purity protected. Our ability to build for hard-to-handle products has been proven—with chlorine, sulphuric acid, helium gas, dozens of others.

GATX GENERAL AMERICAN

Planning Now with Tomorrow's Leaders

Even though your new product or problem commodity is still in the laboratory stage, General American engineers are ready to work with you now. Keeping pace with your progress, we will plan the new tank car with every feature needed for safe, economical transportation.

Call or write our general offices—135 South LaSalle St., Chicago 90, Ill.

GENERAL AMERICAN TRANSPORTATION CORPORATION

Builders and Operators of Specialized Railroad Freight Cars ★ Bulk Liquid Storage Terminals ★ Pressure Vessels and other Welded Equipment ★ Aerocoach Motor Coaches ★ Process Equipment of all kinds ★ Fruit and Vegetable Precooling Service

THE Club Cinema car, designed by *Pullman-Standard,* is another advanced passenger car design intended to be of practical service to the railroad industry.

This car is typical of the progressive styling and planning which *Pullman-Standard* is offering the railroads for the trains of tomorrow.

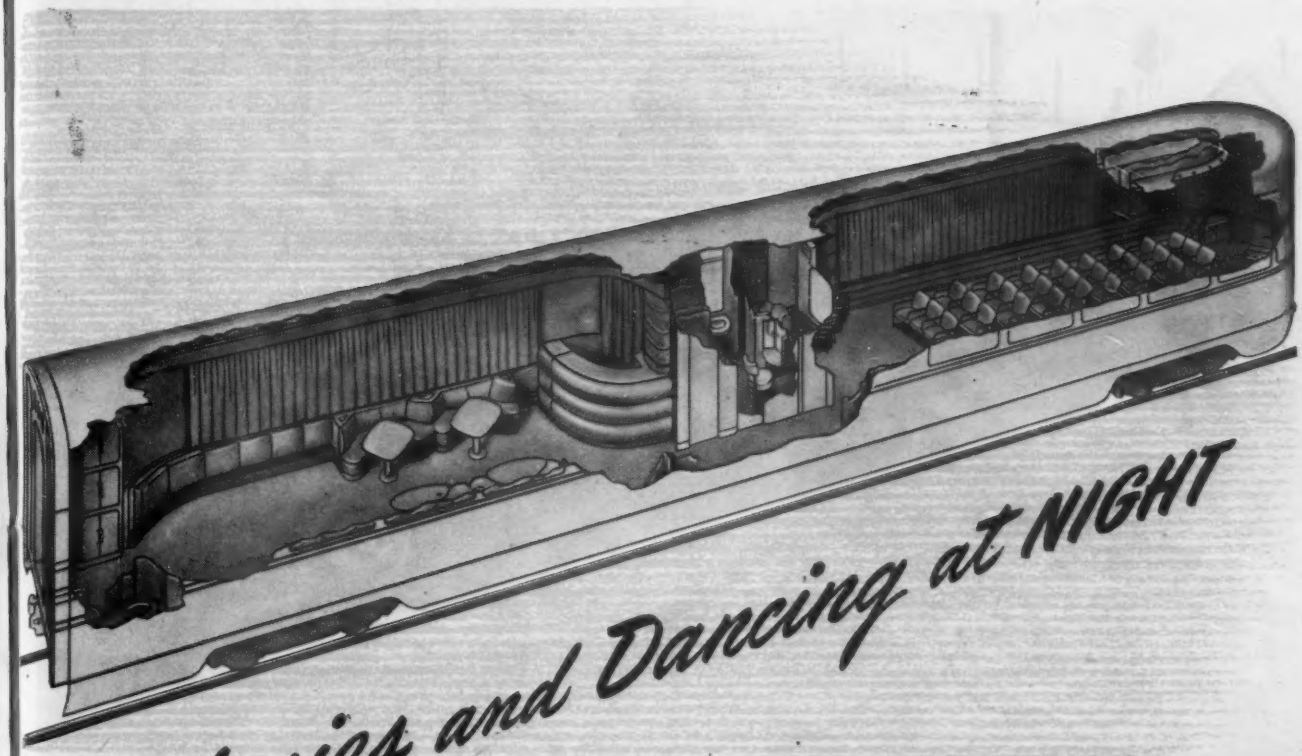
We are continuously studying new conceptions in passenger accommodations—in car capacities and arrangements, as well as in refinements of comfort and luxury.

The Club Cinema combines in one car, cocktail lounge and observation rooms by day readily convertible at night into a smart night club and a miniature theater—offering recreational inducements not found in other forms of transportation. This car should have definite passenger appeal on tomorrow's streamliners.

PULLMAN-STANDARD CAR MANUFACTURING CO
Built by Pullman

Pullman-

CHICAGO • NEW YORK



Movies and Dancing at NIGHT

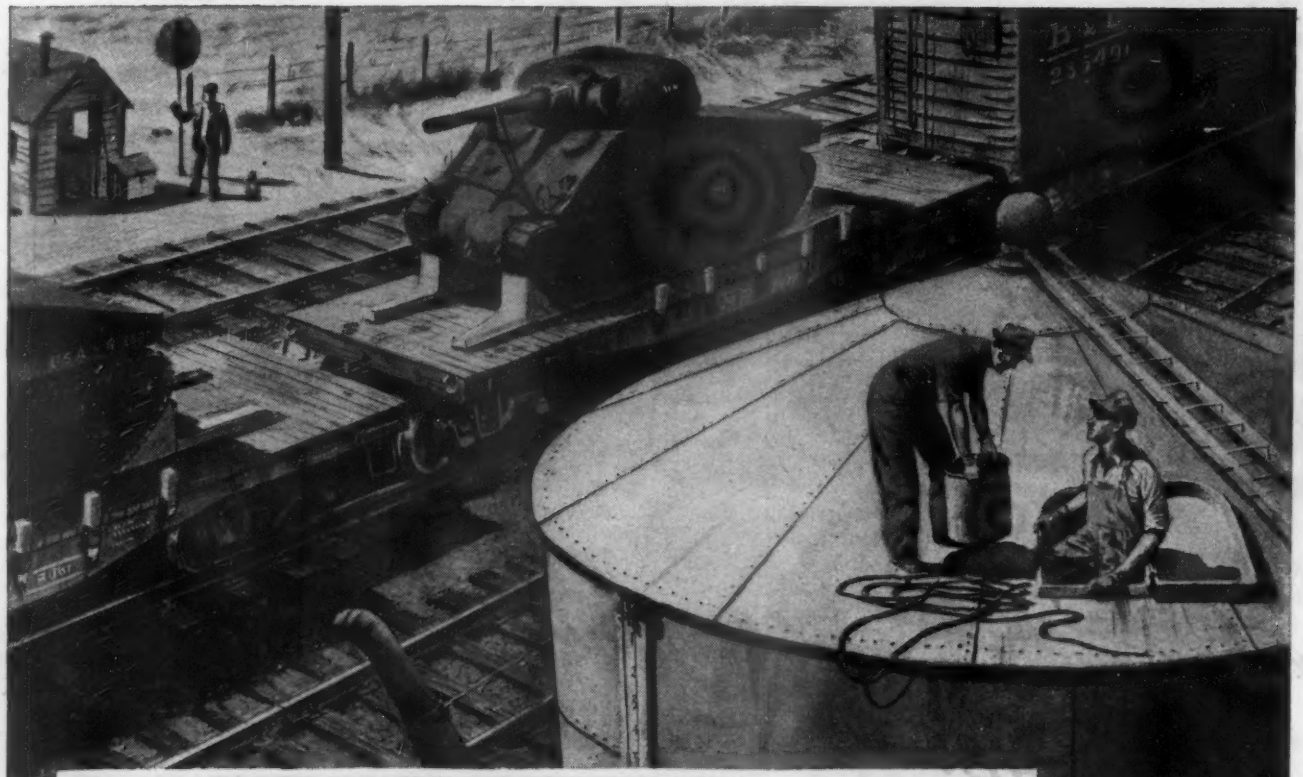
Pullman-Standard builds the MOST because *it builds the BEST.*

◊ PATENT APPLIED FOR

Standard CAR MANUFACTURING COMPANY

CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BALTIMORE • BIRMINGHAM • WORCESTER, MASS.

San Francisco Sales Representative, Mark Noble



Drinking Trough for the Iron Horse

A locomotive must have its water supply of an assured quantity and quality. Drinking troughs for the iron horse stand along the rails at intervals across the country.

Exposed to every extreme of weatner, protection against corrosion . . . inside and out . . . is vital to these railroad water tanks.

You can provide this protection with Flintkote Hydralt Emulsion.

Not only for water tanks . . . but for pipelines, signal towers, bridges, buildings . . .

Any metal or concrete surface exposed to water, weather, corrosive fumes or other destructive factors, can be given durable, economical protection with Flintkote Hydralt Emulsions.

These coatings are non-toxic in application, odorless and tasteless. Use them safely anywhere . . . even to protect the inside surfaces of tanks for drinking water.

Applied cold and applied quickly . . . with trowel, brush or spray . . . Hydralt Emulsions form a durable film of protection that will outlast any other form of asphalt coating.

There are many types of Flintkote products for railroad use, including the widely used Car Cements and Mastics. Write us for more information. Extensive research facilities and more than forty years' experience are at your service.

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INDUSTRIAL PRODUCTS

THE FLINTKOTE COMPANY · 30 Rockefeller Plaza, New York 20, N. Y.
INDUSTRIAL PRODUCTS DIVISION
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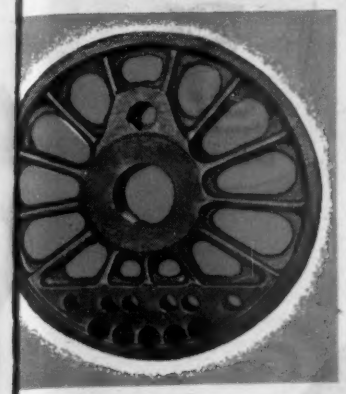
THIS BABY BROKE UP THE CARS!

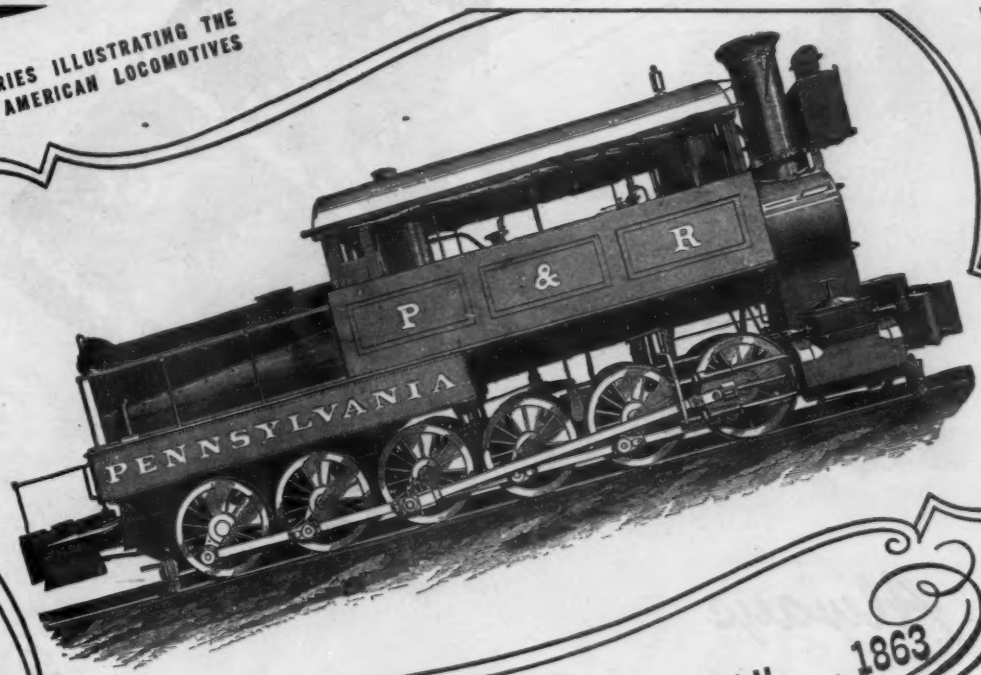


When James Milholland designed this first 0-12-0 pusher for the Philadelphia and Reading he put a lot of power on the rails—but it was power that lacked the smoothness imparted by...

Union WEB Spoke Driving Wheel Centers

- ★ Cruciform section spokes for great additional strength.
- ★ Reinforced rim support to eliminate flat spots, out of roundness, etc.
- ★ Correct distribution of metal for better balancing of smaller diameter wheels.
- ★ Wheels easily inspected before and after installation.
- ★ Troubles due to shrinkage eliminated by simplicity of design.
- ★ Can be made to any material specification.

OF A SERIES ILLUSTRATING THE
TION OF AMERICAN LOCOMOTIVES



THE "PENNSYLVANIA"... 1863

This novel locomotive was built to handle coal trains over the steep hills between the Schuylkill and Delaware Rivers. While originally both fuel and water were carried on the engine, it was later modified to a 10-wheeler with tender to better negotiate curves, some of which were as short as a 320 ft. radius. The "Pennsylvania" was so powerful that it proved destructive to the type of cars then used for handling coal.

From "IRON HORSES"... W. W. NORTON & CO., Inc.

ARMY E NAVY

UNION STEEL CASTINGS

DIVISION OF
BLAW-KNOX CO.
PITTSBURGH, PA.

ARMY NAVY

7 plants of Blaw-Knox Company have been awarded the Army-Navy "E" for excellence

It's Always Fair Weather Underfoot...with

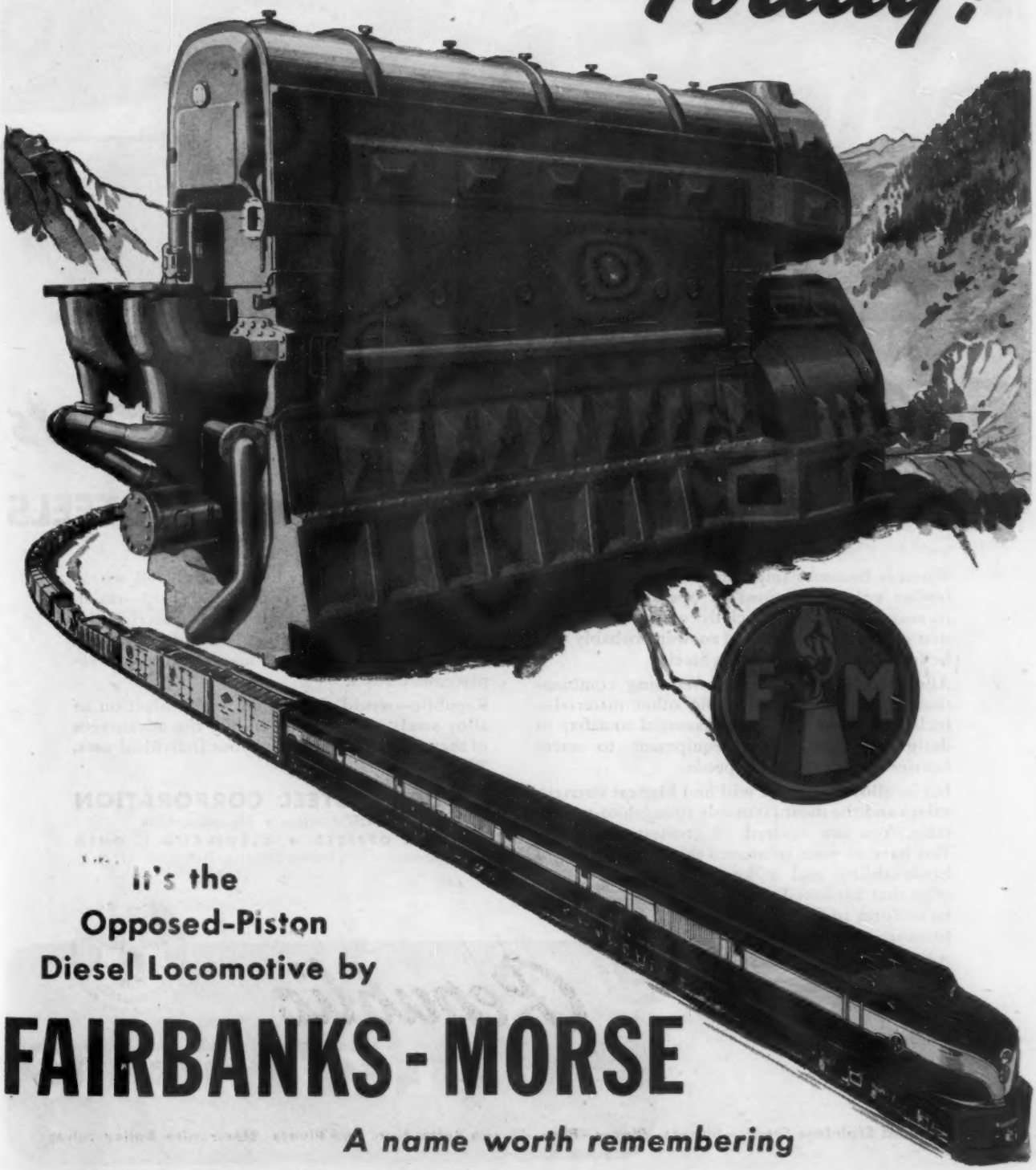
BLAW-KNOX ELECTROFORGED STEEL RUNNING BOARDS

Let it rain, snow, sleet or ice up, there's always safe, sure footing for the man atop a freight equipped with Blaw-Knox Running Boards and Brake Steps . . . It's the unique construction that does it—twisted cross bars are forced into serrated bearing bars and then electroforged into one inseparable unit. Light, strong, self-cleaning and *safe*.

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY

2061 FARMERS BANK BUILDING, PITTSBURGH, PA.

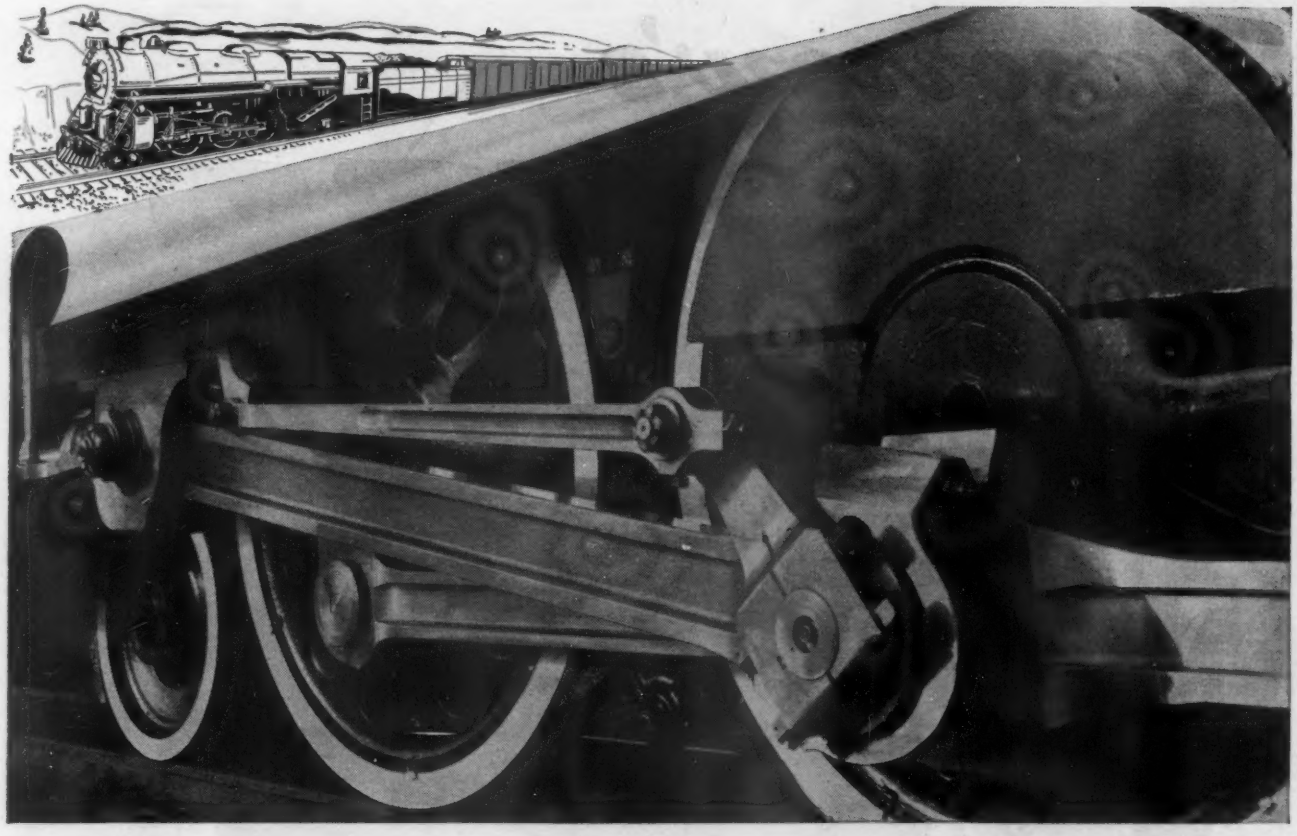
Tomorrow's POWER Today!



It's the
Opposed-Piston
Diesel Locomotive by

FAIRBANKS-MORSE

A name worth remembering



For Safety in Highly Stressed Parts

—No Other Material Can Equal ALLOY STEELS

When it becomes impractical or impossible to further enlarge sections of operating parts to increase strength, especially where concentration of stresses occurs, the answer probably will be found in Republic Alloy Steels.

Alloy Steels provide an outstanding combination of qualities found in no other material—including those properties essential to safety in designing light-weight equipment to carry heavier loads at higher speeds.

For in alloy steels you will find highest strength values and the most favorable strength-to-weight ratio. You are assured of greatest toughness. You have at your command the widest range of hardenability and a knowledge that hardened areas will be uniform in their resistance to wear.

Add to these qualities resistance to fatigue—a very important quality in highly stressed working parts—resistance to heat and cold—resistance to corrosion—and you have a material with the ability to insure safety, to extend service life of equipment, and to cut maintenance and replacement costs.

Republic—world's leader in the production of alloy steels—is ready to discuss the advantages of these steels as applied to your individual uses. Write us.

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ALLOY STEELS

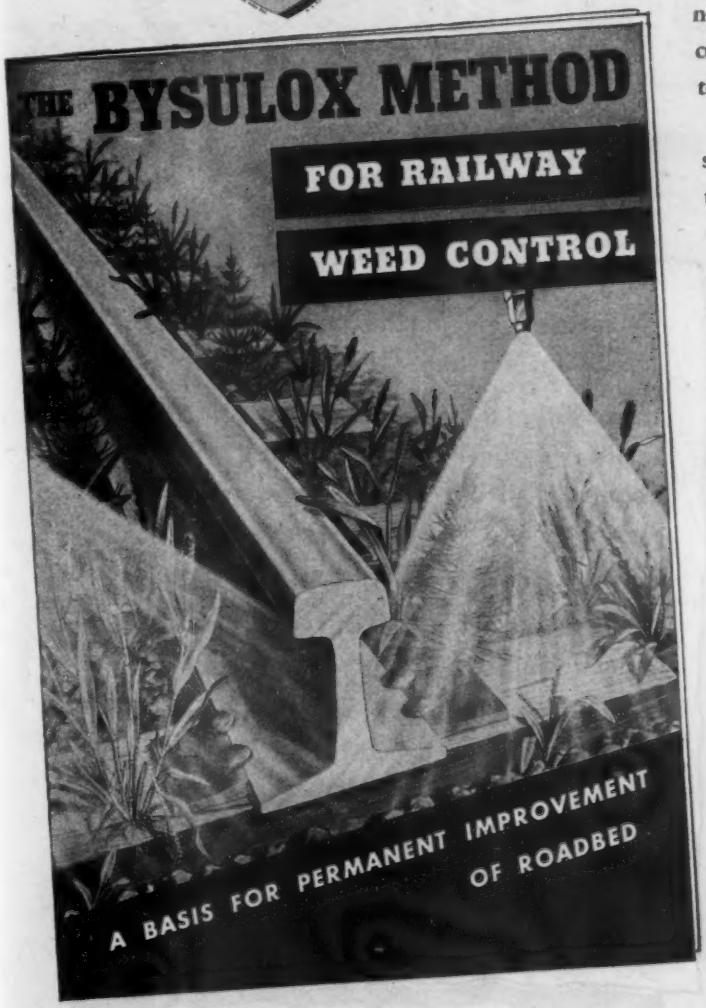
Also Carbon and Stainless Steels—Sheets—Plates—Pipe—Upson Bolts, Nuts and Rivets—Electrunite Boiler Tubes

RAILWAY WEEDS

Advanced 1945 Technique for their Control

BYSULOX KILLS WEEDS

The Bysulox Method of railway weed control combines the latest advances in the science of chemical weed killing with a simplified, economical method of application. Unlike earlier single-action weed killers, the Bysulox Method now provides two highly functionalized liquid chemical compounds, Bysulox A and Bysulox C, which are used to produce the most complete results possible.



General Chemical Company is prepared to supply spray train equipment and experienced operators for the application of the Bysulox Method for chemical control of railway weeds.

The improved operating methods and advanced chemical techniques of our 1945 program will add materially to previous standards of weed control. Investigate this unique method by writing for free folder.

ILLUSTRATED FOLDER FREE

The Bysulox Method of chemical control for railway weeds is fully explained in this new folder. Diagrammatic drawings show the simplicity and unusual advantages of the Bysulox Spray Train arrangement. See for yourself how the Bysulox Method eliminates messy mixing . . . saves time, cost, equipment and manpower. Just fill out coupon below and mail today. No obligation!

Write Today!

A Research Development of

GENERAL CHEMICAL COMPANY
WEED KILLER DIVISION
40 Rector Street, New York 6, N. Y.

GENERAL CHEMICAL COMPANY

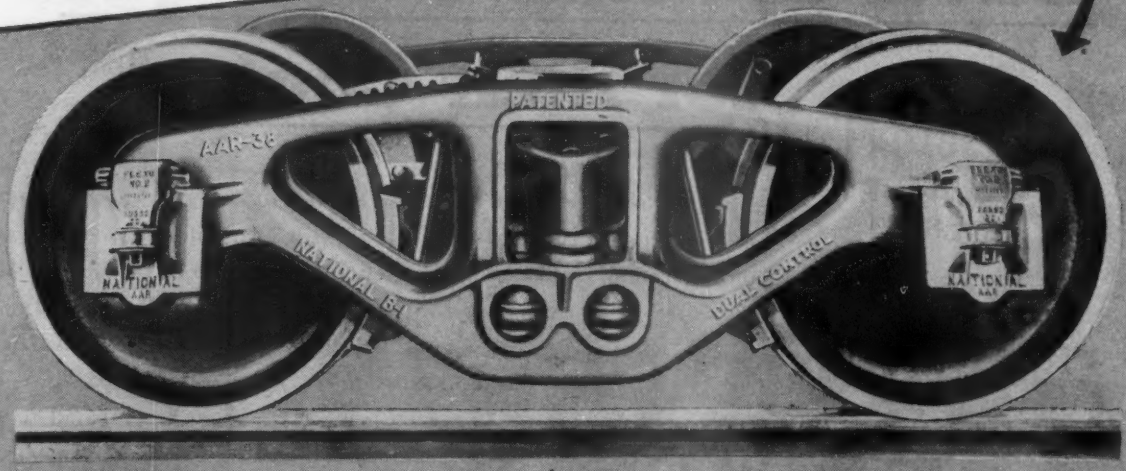
GENERAL CHEMICAL CO., *Weed Killer Division*, 40 Rector St., New York 6, N. Y.

Please send your free, illustrated folder explaining the Bysulox Method for chemical control of railway weeds to:

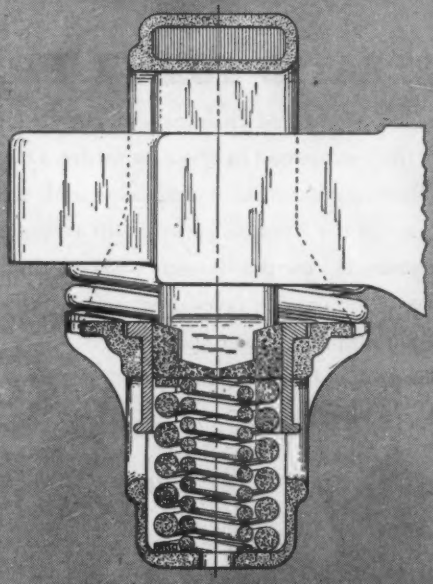
Name.....
Railroad.....
Position.....
Street.....
City.....
Zone.....
State.....

RR-3

The Truck For Smooth, Safe Riding



No Spring Plank
No spring plates
Quick Wheel Change



Section thru Control Unit

A smooth riding car means less damage to lading and longer life for equipment.

The National B-1 Truck has four control units (two in each side frame) which control "spring bounce" and forces which tend to throw trucks out of square.

Cars equipped with National B-1 Trucks with Dual Control can be speeded up with Safety.

Smoother riding and Fewer Parts assure lower maintenance costs.

* * *

The truck for Post-war high-speed freight service.

National B-1 with Dual Control.

Specify National B-1 Trucks with Dual Control to keep cars "on the go"

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND, OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Tomorrow's MODERN SHOCK ABSORBER

For Today's Freight Car Rehabilitation Program

By controlling dangerous and destructive vibration the new Monroe Airplane Type Hydraulic Shock Absorber for freight car trucks minimizes vertical and swaying action . . . protects lading, equipment and roadbed . . . reduces maintenance costs and damage claims . . . and keeps capacity pay-load cars working longer.

Especially designed for freight car trucks, the new Monroe Airplane Type Hydraulic Shock Absorber embodies the same exclusive Monroe Hydraulic Shock Absorber principles which have proved economical, efficient and dependable over millions of trouble-free railway passenger car miles.

With no holes to drill, the new Monroe Airplane Type Hydraulic Shock Absorber is easily and quickly installed. It replaces one of the springs in the cluster and *fits right in* . . . quickly pays for itself and shows added profits through savings.

Our engineers will gladly work with you in the application of this modern new Monroe Airplane Type Hydraulic Shock Absorber for the rehabilitation of your freight cars.

RAILWAY SUPPLY DIVISION

MONROE

MONROE AUTO EQUIPMENT CO., MONROE, MICH.

In use since 1938 on high speed crack streamliners, Monroe Airplane Type Hydraulic Shock Absorbers have smoothed the ride and saved thousands of man hours' maintenance time. They demonstrate the soundness of exclusive Monroe Hydraulic Shock Absorber principles.

Molded

SHAPES AND FORMS

In cellular rubber!

AVAILABLE NOW—cellular rubber made to order for gaskets, seals and weatherstrips of various sizes. Capacity now available for industrial and war needs. Three types,... SPONGEX*, with interconnecting cells. CELL-TITE* *hard* or CELL-TITE *soft* with individual cells. May be made resistant to gasoline, oil, corrosive vapors.

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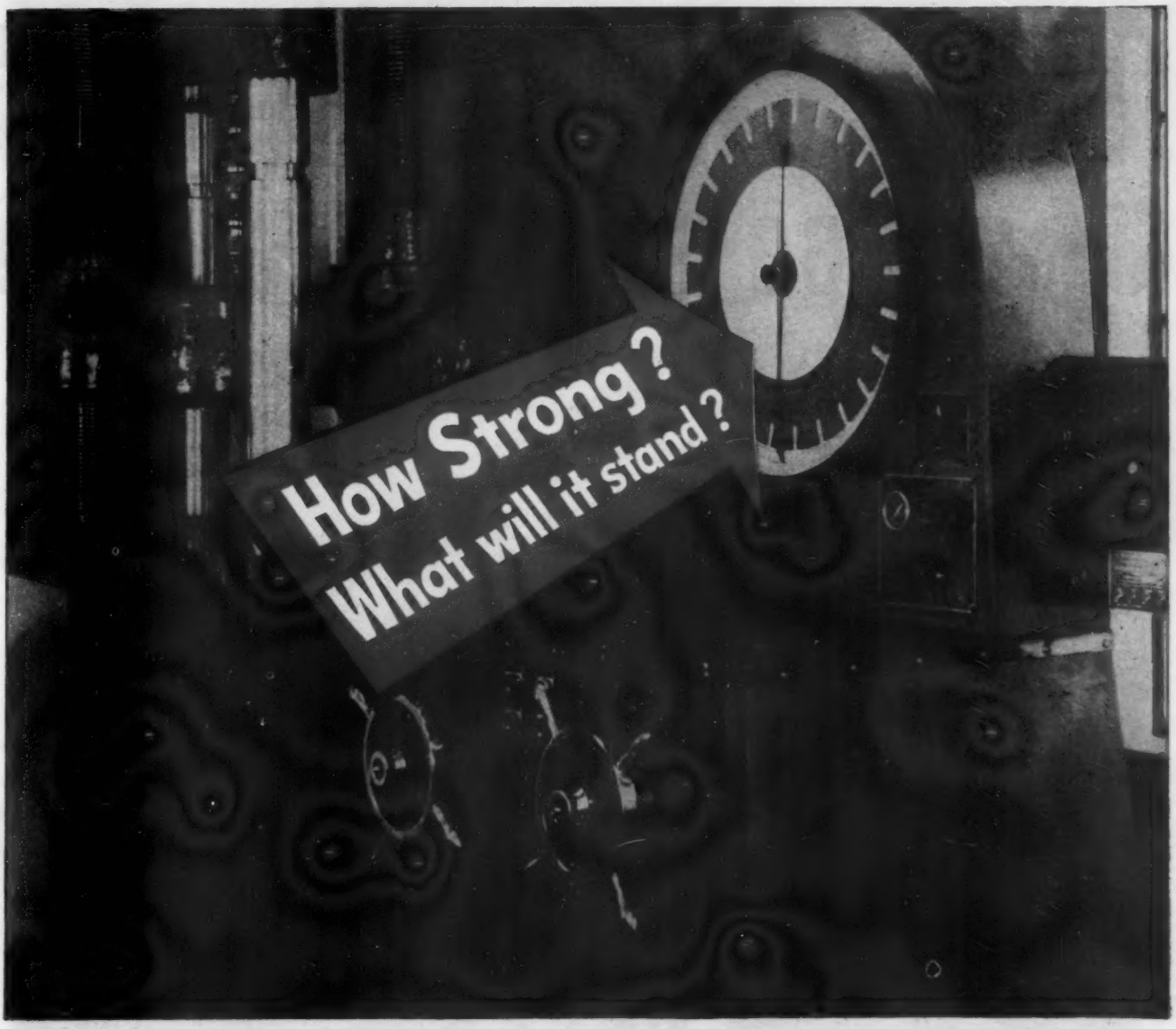

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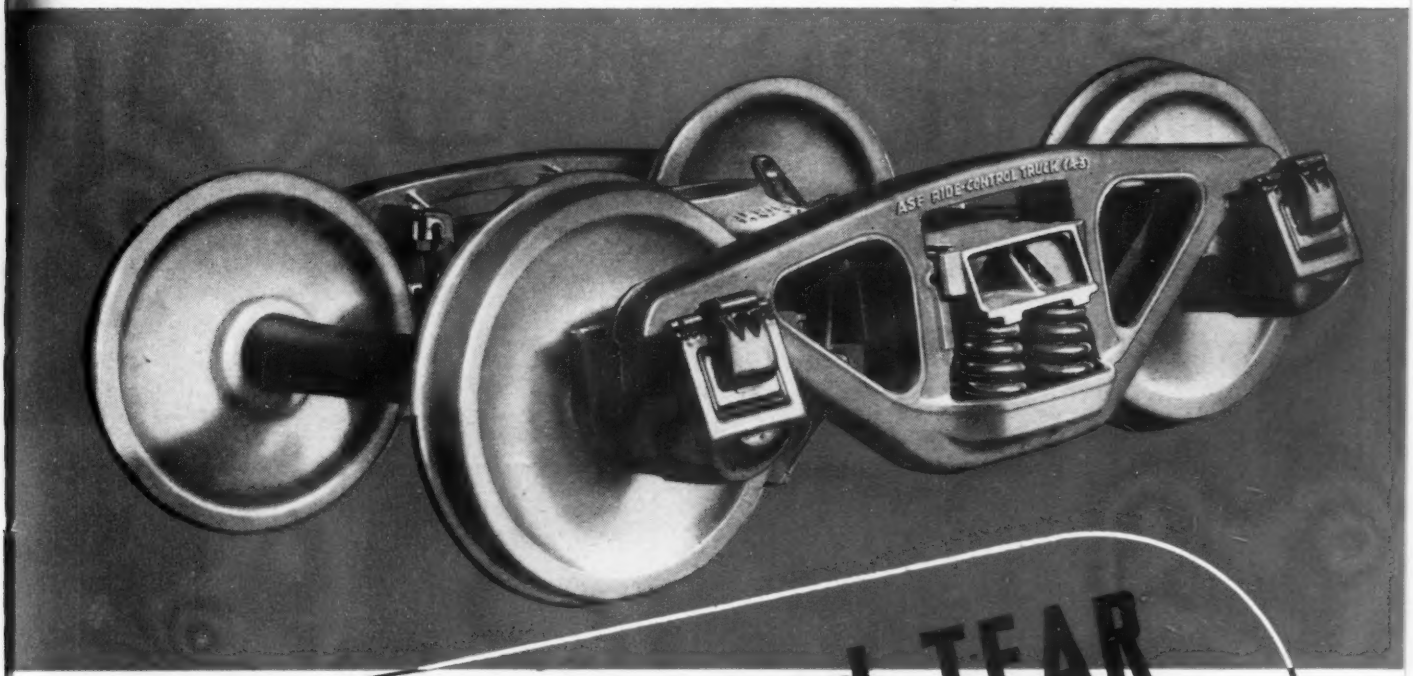

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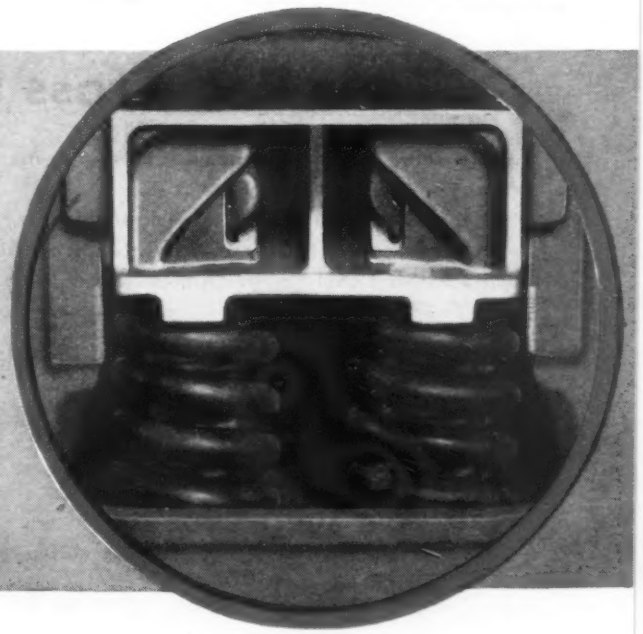

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GIVE *NOW*_
GIVE *MORE*

Keep your RED CROSS *at his side*

RAILWAY AGE

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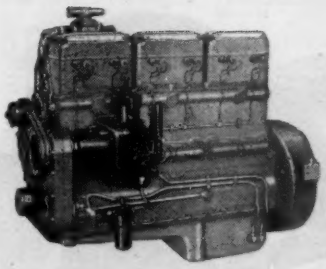

Model HBI-600 Cummins Diesel, designed for railroad service, is a six-cylinder, 4⅞" x 6" engine which develops its maximum 150 hp. at 1800 rpm. Also suitable for railway applications is the Model LI-600 (right), rated 250 hp. at 1000 rpm.

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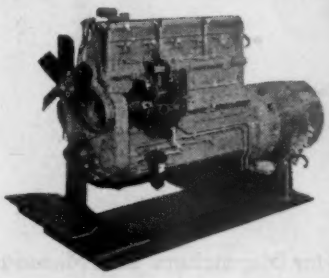

Incorporating the same basic engine as the model described above, this unit (rated 150 hp. at 1800 rpm.) has been specially designed for one of the country's leading builders of locomotives.

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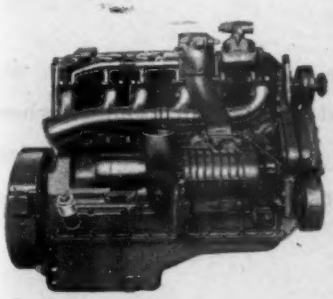

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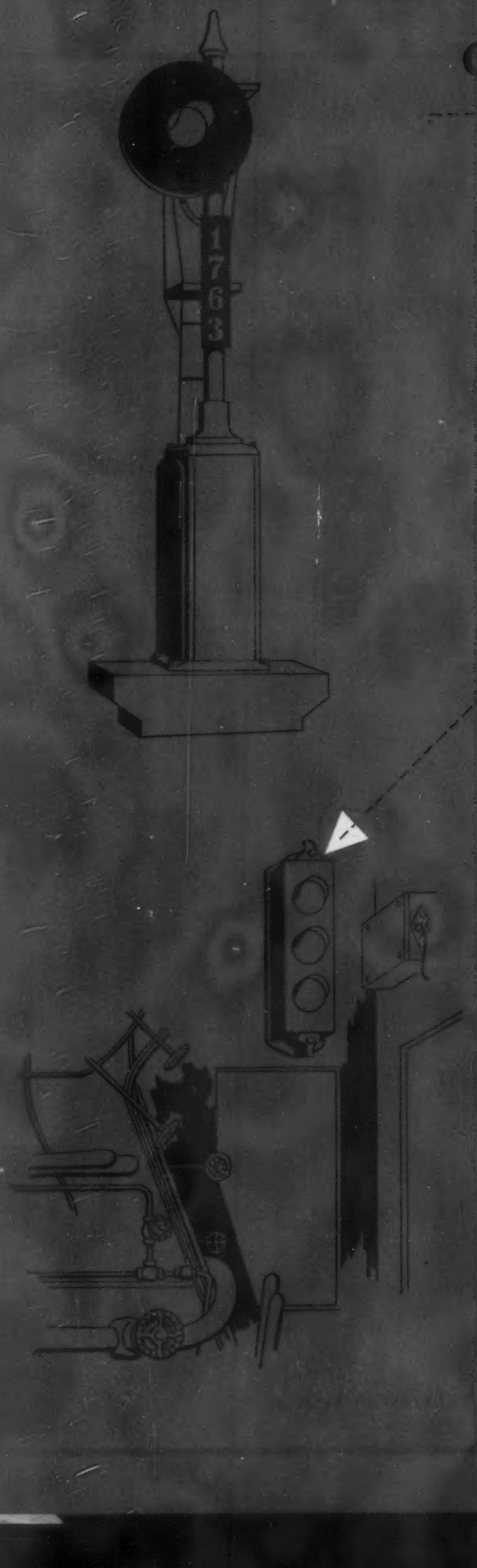
Wayside signals now—

cab signals later



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The Week at a Glance

PORTENT: The confirmation of Henry Wallace as Secretary of Commerce cannot be viewed with indifference by anyone concerned with the preservation of solvent, efficient and economical transportation service. So says this issue's leading editorial as it recalls the former Vice-President's notorious Dallas speech of October 20, 1943, which utterly misrepresented both the facts about the railroads and the principles of transportation economics, as understood by all competent students. Some business groups have shown considerable tolerance for Mr. Wallace, out of expectation for political handouts which his anti-railroad bias may divert their way. But even they can't be very happy about his program for totalitarian political dominance of the entire economy; for it should not be overlooked that he is a disciple of Lord Keynes' spend-ourselves-rich school of economics, championed here by the C. I. O. and political elements generally identified as "left wing."

●

ALUMINUM BOX CARS: The first box cars with superstructures constructed entirely of aluminum were recently completed by the Mt. Vernon Car Manufacturing Company. Built largely of Reynolds aluminum alloy R-301, they are the first three of 30 cars ordered, 10 each, by the Alton, Rock Island, and M. & St. L. Weights range from 37,000 lb. to 42,900 lb. as compared with the 45,000-to-48,000-lb. range for conventional 50-ton steel box cars. Maximum weight reduction was not, however, the primary objective. First consideration was given to designing a lightweight car of exceptional strength, high corrosion resistance, low center of gravity and increased potential load capacity; also one which could not only be built, but repaired and maintained, with tools and equipment already available in car builders' and railway shops. The cars are described in an illustrated feature article beginning on page 444.

●

GEN. GRAY PROMOTED: Brig. Gen. Carl R. Gray, Jr., has been appointed to the newly-created post of director general, Military Railway Service, in charge of the 1st and 2nd M. R. S. in continental Europe. He had been director of the 1st, which was so designated when it moved into southern France last October after having seen service in eight countries of the Mediterranean area. The 2nd has been stationed in northern France. Gen. Gray's outstanding military record has brought him such honors as the Legion of Merit, the Distinguished Service Medal, the Order of the Crown of Italy, and the Bronze Star.

●

CONTROL OF C. & O.: The I. C. C. has received from Director C. E. Boles of its Bureau of Finance a proposed report recommending a finding that control of the C. & O., and through it the Nickel Plate and Pere Marquette, by Alleghany Corporation, Allan P. Kirby and Robert R. Young, was acquired and is maintained in violation of the Interstate Commerce Act. The commission is further advised that it should require these individuals and corporations to take steps necessary to "prevent a continuance of the violation." The commission did not get jurisdiction over such matters until the Transportation Act of 1940 was enacted, which makes the issue turn on the continuity of Alleghany's control. Concededly it had control of the roads in the 'Thirties; but did it thereafter lose control, and, if so, did its resumption of control occur prior to the 1940 act's enactment date of September 18, 1940? Director Bole's report is reviewed back in the News Department.

●

LIGHT METALS' FUTURE: Postwar displacements of ferrous metals by aluminum and magnesium in the fabrication of transportation equipment will be largely a matter of economics, the relative price positions of the two groups of metals determining the choice. That is how Deputy Director Young of O. D. T. and Executive Vice-Chairman Hawthorne of the A. A. R.'s Mechanical Division sized up the outlook for the Senate's special small business committee, in statements which are reported in a news story herein. Mr. Hawthorne expressed his hope that light-metals prices may be cut, for the railroads, while fully appreciating that there is no profit in hauling unnecessary dead weight, see no economy in paying too much of a premium for weight saving, either in first cost, increased maintenance, or reduced life of equipment. General Young didn't think much of the suggestion that higher per diem charges might be assessed against light-weight cars. That would be "little short of opening deliberately a Pandora's box."

●

GOOD START: The House interstate commerce committee this week voted to report favorably the land-grant-rate repealer sponsored by Representative Boren of Oklahoma. This long overdue legislation is thus getting off to a good start, giving the present Congress nearly two years in which to act. The previous Boren bill was not introduced until the final session of the seventy-eighth Congress; and while the House acted promptly, the Senate interstate commerce committee took its time, leaving its amended version to die with the Congress.

●

CROSSTIES: The O. D. T. has at long last taken concerted action to boost lagging crosstie production. It is seeking the cooperation of other government agencies to overcome the serious labor shortage in that field. While this action is all to the good, it will take more than the mere filing of reports of the industry's manpower needs with the United States Employment Service to bring back experienced woodsmen now engaged in more lucrative work elsewhere, and to replace the younger men lost to the armed services. As appraised in one of this issue's editorials, the situation also requires price incentives, and allocations of adequate mill supplies and repair parts, and of tires and parts for motor trucks to haul the timber from the woods to mills and from mills to railroad or treating-plant yards.

JOB KILLER: The expansive social insurance program of the Railway Labor Executives' Association would become a post-war job killer, taking from the railroads millions of dollars annually which they will need to restore their equipment, improve service, and increase employment, according to Fred G. Gurley, president of the Santa Fe. Mr. Gurley was the first of the railroads' chief-executive witnesses to appear at the House committee hearings on the Crosser bill which embodies the R. L. E. A. program. He assailed the bill's proposals to liberalize the retirement and unemployment insurance acts, and called for a two-year suspension of the unemployment tax which has already produced a fabulous reserve—tempting to R. L. E. A. and Retirement Board Chairman Latimer who would spend it for sickness benefits and more liberal unemployment payments. Mr. Gurley's presentation is reported in a news article herein, along with a further report on the comprehensive statement made to the committee by General Solicitor Alderman of the Southern.

●

EX-BARGE GRAIN: The I. C. C. has now decided to give the barge operators a "break" in the somewhat celebrated ex-barge grain case, which a year and a half ago brought upon the commission and the Supreme Court the condemnation of Congress' more vociferous waterway partisans. That was when the court upheld the commission in its refusal to condemn railroad tariffs limiting the application of proportional rates out of Chicago to grain arriving there by rail or lake vessel, thus leaving outbound local rates applicable on ex-barge grain. As reported in a news story herein, the commission has now prescribed proportionals on the ex-barge grain —not so low as the ex-rail or ex-lake proportionals, however. Four commissioners dissented for a variety of reasons.

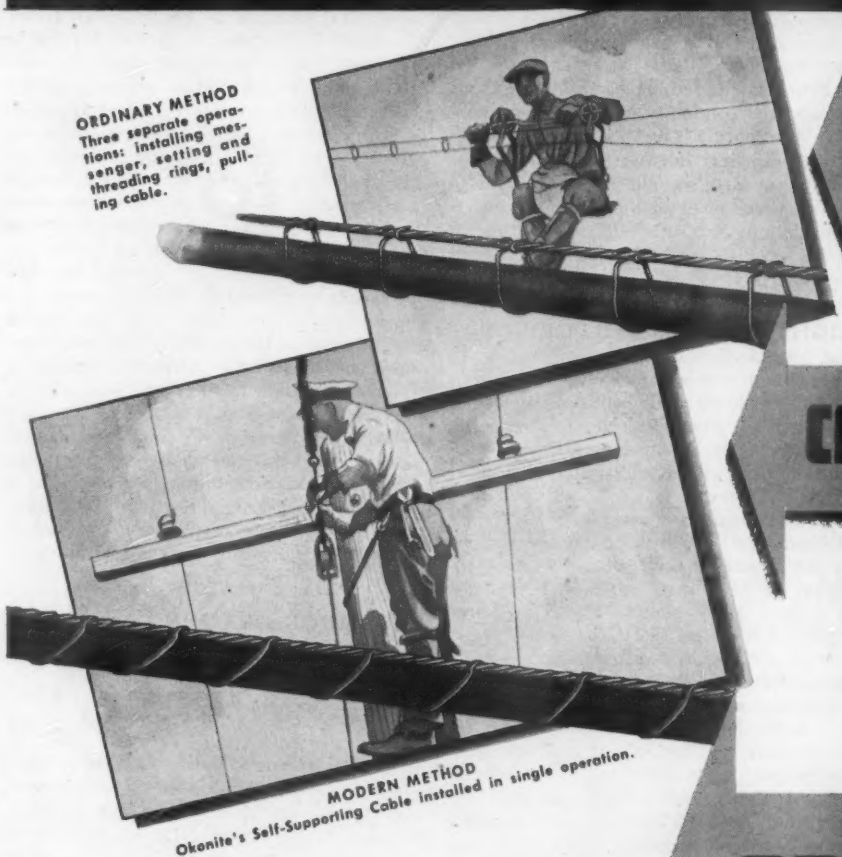
●

ELIMINATING TUNNELS: For several years the Southern Pacific has been carrying on tunnel-elimination work to remove restrictive clearances, either by line relocation or "daylighting" the tunnels on their original alinements. With four still to go, eight tunnels have thus far been eliminated, six of them on the San Joaquin Valley route between San Francisco and Los Angeles, one on the Coast route, and one on the Sacramento division's main line. An illustrated article beginning on page 452 describes the program, which has been featured by the organization of company forces and equipment for the grading work.

●

CREDIT REGAINED: The story of the Pere Marquette's reestablished credit was pointed up recently by its sale of a $50 million refinancing bond issue on a 3.383 per cent basis. This is a far cry from the 1943 situation when P. M. 4s and 4½s sold on the New York Stock Exchange at 35 to 42 point discounts. The whole story, told in a feature article herein, is one of consistent adherence to the debt-reduction policy initiated in October, 1942. Annual interest charges are now half what they were 10 years ago.

GET THE PROPER CABLE CONSTRUCTION FOR BETTER SIGNAL SYSTEMS



ORDINARY METHOD
Three separate operations: installing messenger, setting and threading rings, pulling cable.

MODERN METHOD
Okonite's Self-Supporting Cable installed in single operation.

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CABLE TO DO IT

OKOLITE-OKOPRENE SELF-SUPPORTING CABLE

ADVANTAGES

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All elements of this cable construction have long life under extreme variations of temperature and weather.

Talk over with Okonite engineers the many railway applications of Okolite-Okoprene Self-Supporting Cable and other Okonite insulated wire and cable products. The Okonite Company, Passaic, New Jersey.

Alternate coverings which may be used include lead sheath, metallic armor tapes, saturated asbestos, cotton braids.

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insulated wires and cables

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Henry Wallace a Portent

The confirmation of Henry Wallace as Secretary of Commerce is an event which cannot be viewed with indifference by anyone concerned with the preservation of solvent, efficient and economical transportation service. By his conduct as Secretary of Agriculture and as Vice-President (particularly in his notorious speech at Dallas, Tex., on October 20, 1943, reported in our issue of October 23, 1943, page 657), Mr. Wallace repeatedly revealed—not only a deep-seated ignorance of, or contempt for, the basic facts and principles of transportation economics, but a persistent urge to pontificate, and hence to infect others with his prejudices. Unfriendly to any enterprise which by its nature is forced to be a "big business," the Secretary has time and again evidenced toward the railroads an inexplicable bitterness. He appears to resent the physical fact that less effort is required to propel heavy burdens on steel rails than on highway surfaces or through the water or suspended in the air—and to be determined to apply political obstacles to deprive the nation of the economy inherent in movement by rail to whatever extent he can.

It may be, of course, that, having been given responsibility for the Administration's policy toward all business, Mr. Wallace will summon up sufficient strength of character to rise above his prejudices and that, henceforth, he will seek, not only to promote the legitimate development of newer forms of transportation for the tasks they are best adapted to perform, but that he will strive also to preserve for the American people the increase in national wealth and income which will follow if transportation is permitted to flow in the channels of greatest economy, rather than being artificially deflected into more tortuous and costly courses. It requires a hardy optimism, however, to place any reliance in this possibility.

Railroad Record in Reverse

Mr. Wallace in his Dallas speech laid on present railroad managements the sins of their predecessors—which is the logical equivalent of blaming President Roosevelt for the Teapot Dome scandal which occurred under Harding. He said that the railroads were capitalized at $24 billion—an overstatement by almost $7 billion (capitalization being considered as the total par value of securities in the hands of the public). He implied that the consuming public was being required to pay rates based on railway property "improvidently built, wastefully operated" and "partially obsolete"—with the fact before him of a railway plant, smaller in mileage and equipment than that of 1929, being used to produce 63 per cent more freight service and 184 per cent more passenger service than in 1929, at average rates 14 per cent less for freight service and one-third less for passengers. He complained of the magnitude of the railways' bonded indebtedness at a time when almost revolutionary progress in the reduction of this debt was occurring. There was and is, in short, no evidence to prove anything but the exact contrary of all of Mr. Wallace's accusations against the railroads.

Confuses "Cost" and "Expense"

In discussing transportation competition, Mr. Wallace spoke of the "low-cost appeal" of highway and waterway transportation, indicating either his ignorance of, or desire to confuse, the economic difference between *cost* and *expense*. The cost of waterway and highway transportation includes the contribution of the public treasury to the provision of facilities, and does not comprise merely the expense to the owner of operating and maintaining his barges or trucks. The public official honestly and competently zealous of the national interest in fostering true economy in transportation would not speak of "cheaper transportation" when he actually meant that which is more costly, made to appear cheaper than it is by the assumption by taxpayers of a large share of the actual costs.

In many other particulars in his Dallas speech, as well as before and since, Henry Wallace utterly misrepresented both the facts about the railroads and the principles of transportation economics, as understood by all competent students. Whether he has done this from malice or from ignorance makes no practical difference. The fact that matters is that a man who heretofore has maligned the railroads and disseminated misunderstanding of their position in the economy has now been given an official pulpit from which to renew his campaign of confusion and abuse. It would be a violation of the virtue of prudence on the part of those who have at heart the national interest in economical transportation if they should fail to take cognizance of this situation and to prepare as best they can to meet it. The rumor of an Administration plan to subordinate the I. C. C. and other independent agencies to the Commerce Department gives added occasion for alertness.

Mr. Wallace's record shows his proclivity to special mischief in the field of transportation, but it should not be overlooked, either, that he is a disciple of the spend-ourselves-rich school of economics, originated by Lord Keynes and championed in America by the C. I. O. and political elements generally identified as "left-wing." Some business groups have shown considerable tolerance for Mr. Wallace, out of expectation for political favors and hand-outs which his anti-railroad bias may divert their way—but even they can't be very happy about his program for totalitarian political dominance of the entire economy.

Stepped-Up War Plans

Confronted with the need for continuing large programs of track and structures maintenance in the months ahead to insure the continuity and safety of wartime rail transportation, many maintenance of way officers are becoming increasingly concerned by the growing stream of talk in government and military circles of stepped-up war plans, which, if carried out, bid fair to make their already difficult tasks still more difficult.

Stunned by the December setback on the Western front, and chagrined by their miscalculations concerning the early defeat of Germany that led to over-optimism and a letdown of production on the home front, both government agencies and those directing our military activities appear determined to undo their mistake. Plans for cut-backs and reconversion have been thrown overboard; war-production schedules are being stepped up; and victory in Europe will bring little relief to the home front, we are being told, as plans for the relief of liberated countries and an early all-out drive on Japan will call for continued maximum output until final victory in the Pacific is achieved.

As for the drive on Japan, plans not yet fully disclosed call for diverting our Western armies to the East immediately upon the fall of Germany, and refitting them largely with new equipment from the home front, rather than awaiting the sorting, repair, adapting and reshipping of released heavy equipment and supplies from the European theater. Such plans, if carried out, are certain to put a continued heavy strain on home-front production.

No one on the railways will question new aggressive plans for the earliest victorious conclusion of our wars in both Europe and Asia, but railway men would be foolhardy and grossly remiss in their responsibilities if they did not analyze all such plans carefully in an effort to ascertain the extent to which the railways will be affected, especially by new or altered demands for transportation and by possible further restrictions on their essential requirements in man-power, materials and equipment. There are those who discount the new pressure talk as largely "hardening" propaganda to offset the earlier "softening" that had set in, and they may well be correct, in part. However, there are a number of signs to the contrary, as the War Production Board begins to show a stiffening attitude toward all but strictly military requirements, and the increased pinch is already being felt or is anticipated by many manufacturers of railway equipment and supplies.

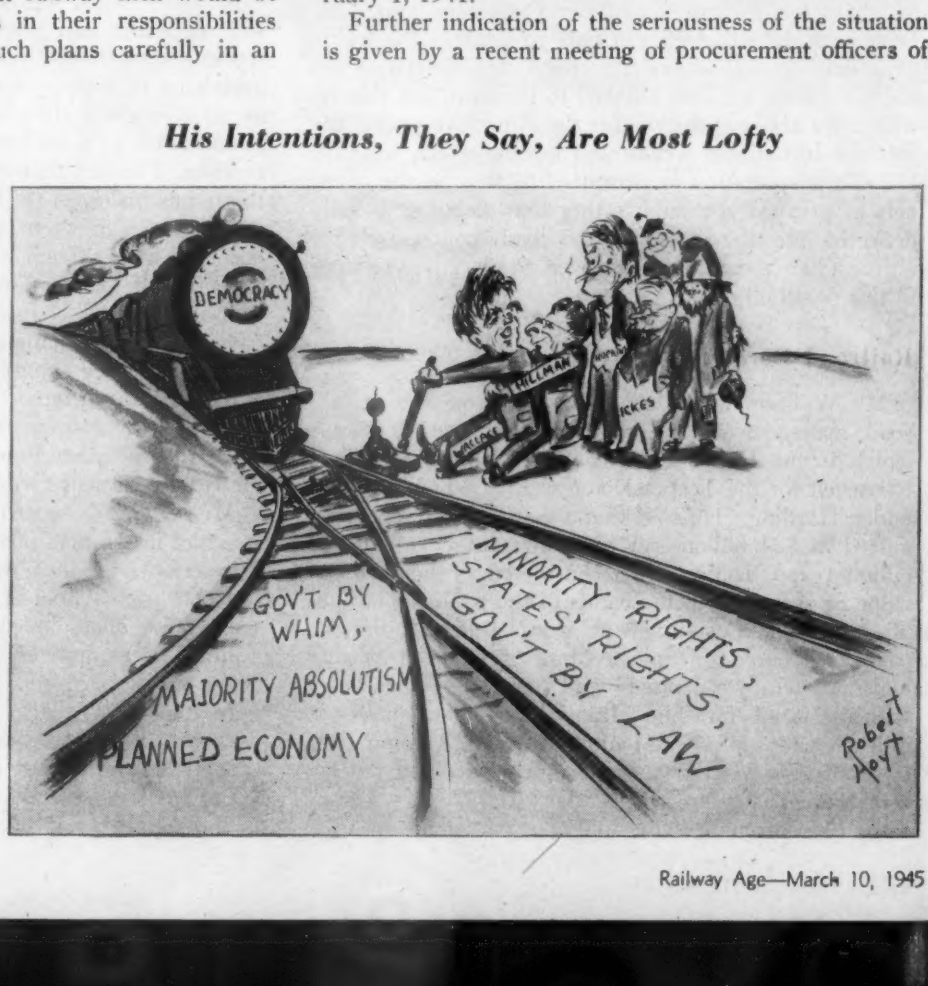
Already handicapped seriously by shortages in man-power, materials and work equipment in their efforts to maintain the fixed properties of the railways in a condition adequate to present needs, maintenance of way and structures officers have a special responsibility to keep themselves apprised of all new developments which may affect them. This is necessary, first, to enable them, with the least loss of time and effort of their forces, to adjust their plans to new conditions, and, second, to enable them to give prompt warning against any tendency to deprive them unduly of those essentials, without which they cannot sustain their indispensable contribution to the war program.

Plan to Increase Crosstie Production

Concerted though belated action has now come to boost lagging crosstie production. The O. D. T. is seeking the cooperation of other government agencies to overcome the serious labor shortage. As was explained in a brief review in the January 6 *Railway Age,* crosstie supplies are, with few exceptions, adequate for 1945 insertion programs, but falling production darkens the outlook for the future. Since that report, production has declined steadily. According to the records of the Railway Tie Association, crosstie inventories of ten producing companies on January 1, 1945, amounted to approximately 71 per cent of the number on hand on January 1, 1944, and 56 per cent of the inventory of January 1, 1941. Preliminary reports for February show further reductions, with current stocks only 53 per cent of inventories of February 1, 1941.

Further indication of the seriousness of the situation is given by a recent meeting of procurement officers of

His Intentions, They Say, Are Most Lofty



eastern railways called to consider methods of increasing crosstie production. Individual companies within the tie industry are now engaged in preparing reports for a labor survey undertaken by the War Manpower Commission at the request of the O. D. T.

Although the railways and the tie industry hope that adequate measures may be adopted to overcome the unsatisfactory conditions which have grown steadily worse since last August, a real solution involves several additional factors. As long ago as January 1, 1944, the *Railway Age* pointed out that: "As long as the war continues, over-all production [of crossties] will continue to decline unless steps are taken immediately to eliminate present obstacles and to place the industry on a firm basis." Continuing, it was pointed out that crosstie production troubles sprang not only from the shortage of man-power but also from the inequalities existing between the ceiling prices of lumber and ties, the widespread lack of adequate mill equipment, accessories and supplies, and the extensive buying of forest products by government agencies.

Co-ordinated efforts and close cooperation will be necessary if the ravages of the improvident attitude of the past few years are to be overcome and production losses are to be recouped. It will take more than the mere filing of reports of the industry's needs with the United States Employment Service to bring back experienced woodsmen now engaged in more lucrative work elsewhere, and to replace the younger men that the tie industry has lost to the armed services. Price incentive must be established at a figure which will make production of crossties more attractive—to induce smaller mills to saw crossties and to refrain from the present practice of cutting tie timber into lumber which brings a better price. Adequate mill supplies and repair parts will need to be made available promptly so that mills which have discontinued operation may be put back into service. Truck transportation is an important factor in the tie industry, and tires and repair parts for these vehicles will have to be forthcoming if tie timber is to be hauled from the woods to the mill, and from the mill to the railroad or treating plant yards. It is true that labor supply is an important part of the crosstie problem—but the additional factors here mentioned must also receive attention if tie producing organizations are to be rehabilitated and placed on a basis of production adequate to the need for crossties.

Looking Ahead

It is significant that so many advertising pages in business papers, as well as popular magazines, are being used by manufacturers of well-known products, which for the time being are not available, having been pushed aside to permit intense production of war necessities. Back of such advertising is the fact, implied or expressed, that engineers and designers are busily engaged in planning for improvements in these products, which will make them much more attractive to the purchaser when their manufacture can be resumed. There are suggestions, also, that new products or materials or discoveries that have been developed as a result of the intense effort to speed up the production of and make more effective war equipment, may be adapted in various forms to civilian use when peace comes. These things are frequently emphasized in off-the-record conversations at engineering or technical meetings, or when men gather around the table informally to discuss post-war conditions.

While some of the ideas may appear to border upon the fantastic, we do know with certainty that much progress has been made in the laboratory, on the drawing boards and even in service tests, to assure us of radical improvements in almost every phase of civilian life.

An excellent illustration or demonstration of the possibilities for radical improvements in future railroad equipment is an elaborate display that is being shown privately by the Pullman-Standard Car Manufacturing Company. Advanced as some of the passenger car designs may seem to be, as shown by models, it is well to recognize the fact that these improvements are so closely related to the up-to-date designs that have featured passenger equipment in recent years, that there seems to be little doubt concerning their practicability. Moreover, the plans have been advanced to such an extent that little difficulty should be found in placing them in actual production, once materials and man-power are available.

Not only will they provide for greater luxury and convenience in travel, but they cover a wide range of requirements which should satisfy the needs of people in different income brackets. Equipment of this sort should prove to be an important factor in helping the railroads to retain passenger business, in spite of the keen competition that may be expected from other types of carriers. It is well that these new designs are available, for the present passenger equipment is being subjected to heavy and intensive service, and much of that which is now in operation promises to be obsolete when new equipment becomes available.

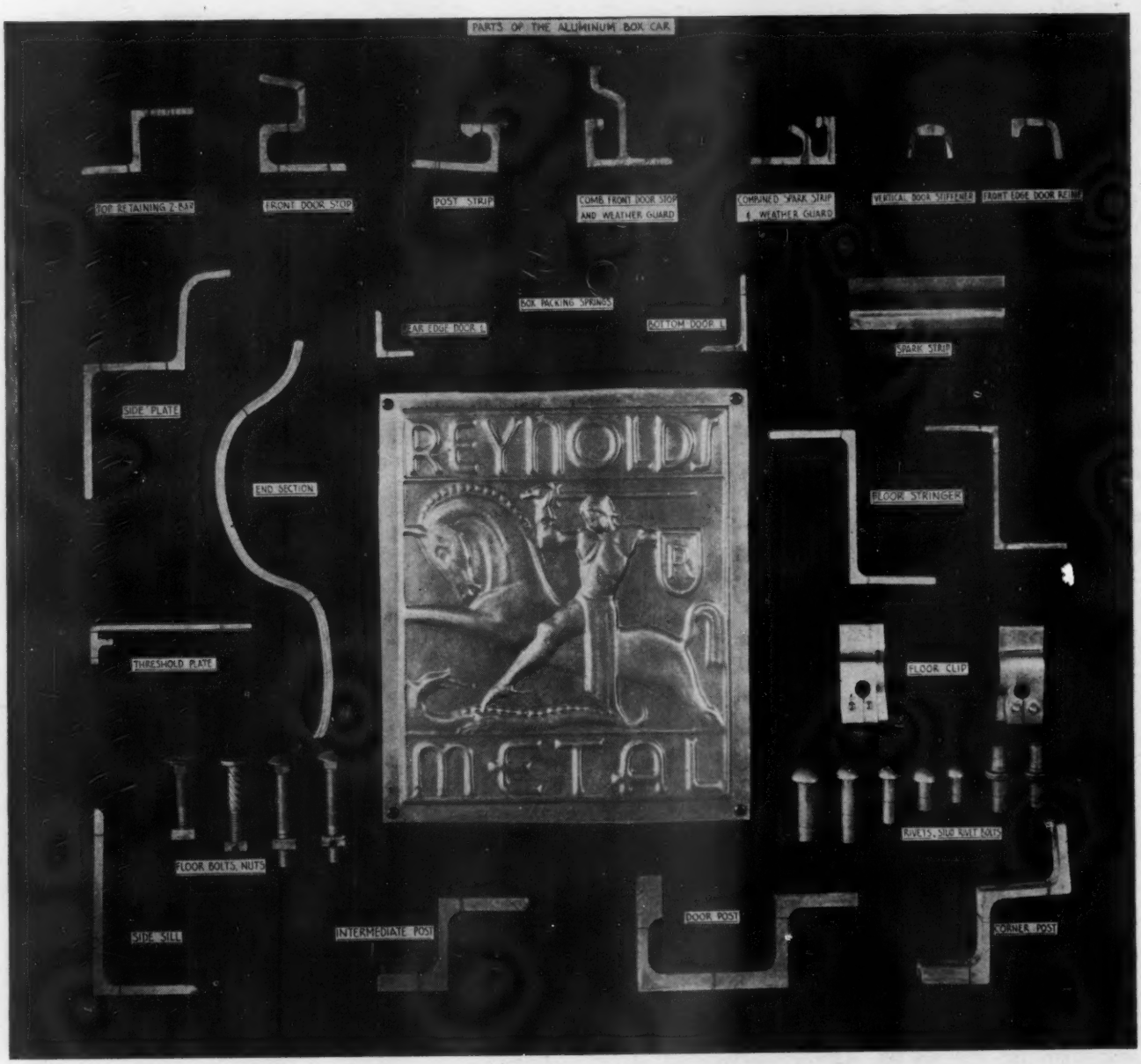
While the Pullman Company has been the first to assemble such a large and striking exhibit, it is no secret that most of the railway supply manufacturers have been quietly, and in some cases intensively preparing to serve the railroads with new and improved products and equipment when peace comes.

Railroad Retirement Laws

The President has asked Congress for early action on proposals to liberalize and expand the Railroad Retirement Act, but there is in fact no excuse for the particular legislation proposed. It was a mistake in the first place to put the railroad workers under a different public retirement system from all other workers. Old-age insurance for the railroad workers should obviously have been provided under the nation's general old-age insurance plan. The railroad workers, however, were favored in pension legislation adopted especially for them. When the general old-age insurance plan was revised in 1939, other workers received some family benefits not granted to the railroad workers. The new legislative proposals seek not only to catch up with this but to put the railroad workers on an even more favored basis than they were before.

It ought to be an elementary legislative axiom that in national old-age insurance all classes of workers should be treated alike. To put one class of workers on a higher basis than others creates almost insoluble administrative difficulties when workers shift their occupations. But an even more serious objection is that it represents the kind of favoritism and discriminatory treatment that ought not to be tolerated in a democracy.

—From the New York Times



Aluminum Parts of the Reynolds Box Car .

First Aluminum Box Cars Are Delivered

Reynolds engineers design and Mt. Vernon builds first of 30 cars for the Alton, the Rock Island and the M. & St. L.

THREE aluminum box cars, which for the first time incorporate complete aluminum superstructures, including side frames and sheathing, ends, roofs, doors, etc., were recently completed at the Mt. Vernon, Ill., plant of the Mt. Vernon Car Manufacturing Company, a division of the H. K. Porter Company, Inc., of Pittsburgh, Pa. These cars, built largely of Reynolds Aluminum alloy R-301 and designed by engineers of the Reynolds Metals Company, Chicago, in consultation with the Car Construction Committee of the A. A. R. Mechanical Division, comprise part of an order for 30 cars, or 10 cars each, which will soon be delivered to the Alton; the Chicago, Rock Island & Pacific; and the Minneapolis & St. Louis.

The cars have the same general dimensions as conventional 50-ton cars, namely, 40 ft. 6 in. length inside, 9 ft. 2 in. width inside and 10 ft. 6 in. height inside. The design has been approved by the A. A. R. and permission granted to build 50 cars for use in general interchange service. Whereas conventional 50-ton steel box cars usually weigh from 45,000 to 48,000 lb., the light weight of these cars varies from 37,000 lb. for the M. & St. L. car to 38,000 lb. for the Alton car and 42,900 lb. for the Rock Island car which has Type AB1B air brakes, steam and air signal lines, Barber stabilized swing-motion trucks, solid axles, Timken roller bearings on five cars, one-wear steel wheels, and is designed for head-end service in high-speed passenger trains.

The Alton, or next lighter car, also has Type AB1B air brakes, steam and signal lines, Cardwell stabilized double-

truss spring-plank trucks, hollow axles, one-wear steel wheels and is designed for head end service in local passenger trains. The M. & St. L. car, with Type AB brakes, Barber stabilized spring plankless trucks, hollow axles and one-wear steel wheels is intended for freight service only, and hence does not require steam and signal lines or passenger air brake equipment. With relatively light trucks, this car weighs 37,000 lb., or about 5 tons less than conventional steel box cars of the same size and capacity.

Objectives Sought in the Design

The story of the new Reynolds 50-ton aluminum box cars is effectively told in four tables accompanying this article; namely, the table of general dimensions, one giving detail car weights, another listing the car parts made of aluminum and of steel, and the last showing the materials and equipment used on the different lots of cars. The primary objective in developing this particular type of car was not to achieve maximum weight reduction, but to produce a lightweight design of exceptional strength and durability, high corrosion resistance, low center of gravity, increased potentional load capacity and one which would be not only built new, but repaired and maintained with tools and equipment already available in car builders' and railway shops. Service experience with the 30 cars now under construction is expected to prove the availability and adaptability of aluminum as a structural material for box cars in a design especially developed to meet the exacting requirements of railway service.

To meet A. A. R. strength requirements and the present preference of a great majority of railway mechanical officers, the underframe of the Reynolds car comprises welded steel construction with a carbon-steel center sill, alloy-steel bolsters and cross bearers, steel-center plates and draft lugs. The longitudinal floor supports, however, are made of aluminum, as are also the side sills, side plates and all other parts of the car superstructure except the door track and fixtures and the safety appliances which are of steel. A total of 31 parts of the car body are made of aluminum as compared with 11 parts made of steel. In the case of the Rock Island car, for example, the aluminum parts weighed 7,017 lb., or 28.8 per cent of the total car body weight. Steel parts weighed 10,823 lb., or 44.5 per cent of the total; and lumber, insulation and other materials, 6,500 lb. or 26.7 per cent of the total. The center of gravity of this car when empty is only 48 in. above the rail.

An example of the way in which car strength has been secured at some sacrifice in weight saving is afforded by the side and end construction. More than the usual number of side posts are pro-

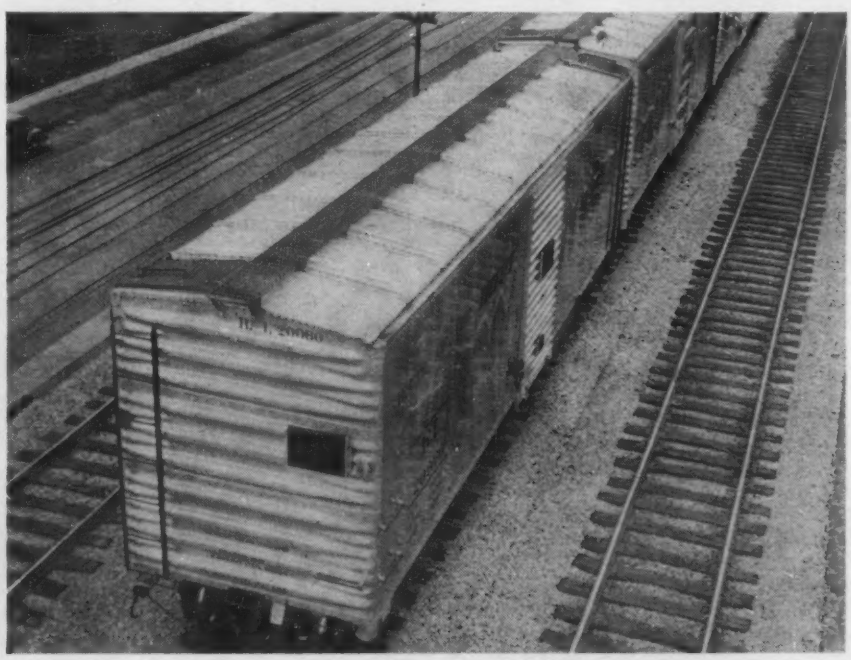
General Dimensions of Reynolds Aluminum 50-Ton Box Car

Length over pulling face couplers, ft.-in.	44- 4
Length inside, ft.-in.	40- 6
Length truck centers, ft.-in.	30-10
Width overall (door fixtures), ft.-in.	10- 7½
Width over frame, ft.-in.	9- 9⅝
Width inside, ft.-in.	9- 2
Height from rail to top running board, ft.-in.	14-11¾
Height from rail to floor, ft.-in.	3- 7¾
Height inside, ft.-in.	10- 6
Clear height door opening, ft.-in.	9-10¹¹/₁₆
Clear width door opening, ft.-in.	6- 0
Cubic capacity, cu. ft.	3,900
Load capacity, lb.	100,000

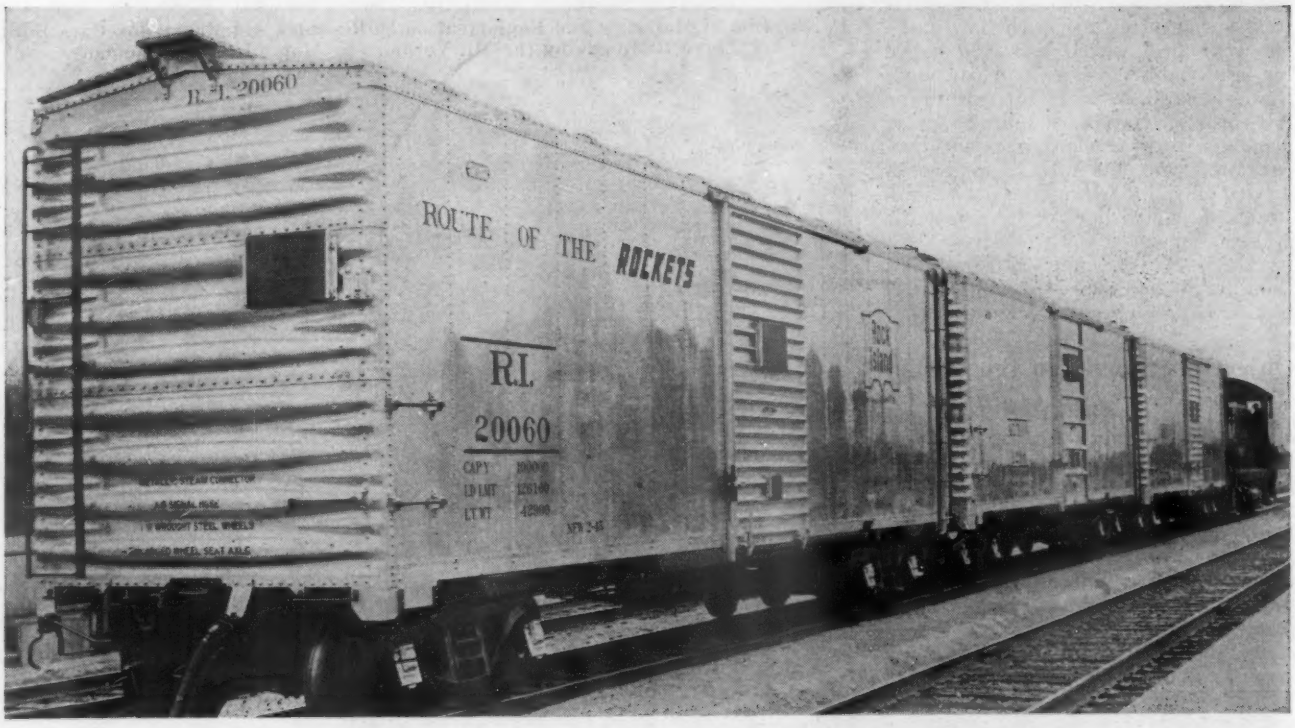
Partial List of Materials and Equipment on 30 Reynolds Aluminum Box Cars Built for Three Railroads by the Mt. Vernon Car Manufacturing Company

	Alton (10 cars)	Rock Island (10 cars)	M. & St. L. (10 cars)
Air brakes	Westinghouse AB1B	Westinghouse AB1B	New York AB
Air brake pipe	Byers extra heavy w.i.	Steel	Extra heavy steel
Axles	Pittsburgh, hollow	Carnegie-Illinois	Pittsburgh, hollow
Body brake levers	Schaefer	Car builder	Car builder
Bolsters & side frames	Cardwell (2 cars) Buckeye (8 cars)	Buckeye	Buckeye Pittsburgh Steel*
Bottom rods	Schaefer	Schaefer	Schaefer
Brake beams	Creco No. 15	Creco No. 15	Creco No. 15
Brake beam hangers	Schaefer	Schaefer	Schaefer
Brake beam supports	Creco 3-point	Creco 4-point	Grip Nut
Brake hd. wear plates	Illinois Ry. Equip.	Schaefer	Illinois Ry. Equip.
Brake pipe clamps	Illinois Ry. Equip.	Car builder	T-Z Ry. Equip.
Brake shoes and keys	Am. Brake Shoe	Am. Brake Shoe	Am. Brake Shoe
Brake steps	Apex	Apex	Apex
Branch pipe anchor	Illinois Ry. Equip.	Car builder	T-Z Ry. Equip.
Cotters	Gustin-Bacon	Common	Central Ry. Equip.
Couplers	National Malleable	Buckeye	National Malleable
Coupler cush. device	Standard Ry. Equip.	Standard Ry. Equip.	Standard Ry. Equip.
Coupler yokes	Buckeye	Buckeye	Buckeye
Defect card holder	Apex R 4 A	Apex R 4 A	Apex R 4 A
Doors	Superior (5 cars) Camel (5 cars)	Camel	Camel
Draft gear	Cardwell West.	Miner (5 cars) Card. West. (5 cars)	Miner A-22-XB
Draft key ret. lock	Illinois Ry. Equip.	None	Illinois Ry. Equip.
Dust guards	Ajax	Plywood (5 cars)	Laminated wood
Ends and roofs	Standard Ry. Equip.	Standard Ry. Equip.	Standard Ry. Equip.
Floor bolts and nuts	MacLean-Fogg	Grip Nut	MacLean-Fogg
Floor clips	MacLean-Fogg	MacLean-Fogg	MacLean-Fogg
Hand brake	Ajax	Equipco	Superior
Journal bearings	Magnus, Satco	Magnus, Satco (5 cars) Timken (5 cars)	Magnus, Satco
Journal boxes	Cast in side frames	Fort Pitt (5 cars) Timken (5 cars)	Cast in side frames
Jour. box lids (alum.)	Motor Wheel	Alco (5 cars) Timken (5 cars)	T-Z
Journal packing	Spring Pkg. Co.	Spring Pkg. Co. (5 cars)	Spring Pkg. Co.
Plackard bd. brackets	Trans. Specialties	Trans. Specialties	Trans. Specialties
Roof insulation	Dednox	Insulmat	Plywood
Running boards	Apex	Apex	Apex
Side bearings	Stucki	Stucki	Stucki
Signal pipe	Byers standard w.i.	Extra heavy steel	Crane steel
Slack adjusters	Royal K-2	.....	.....
Snubbers	Card. West. (8 cars)	.....	.....
Springs	Card. West. (6 cars) Am. Loco. Co. (4 cars)	Standard Car Truck	Am. Loco. Co.
Spring plates	Card. West. (2 cars) Am. Loco. Co. (8 cars)	None required	T-Z
Steam line	Byers ex. heavy w.i.	Extra heavy steel	None
Truck brake levers	Schaefer	Schaefer	Schaefer
Trucks	Cardwell (2 cars) Double-truss (8 cars)	Barber S-4-L	Barber S-2
Truck stabilizer	Card. West. (2 cars)	Barber S-4-L	Barber S-2
Waste retainers	Spring Pkg. Co.	Spring Pkg. Co. (5 cars)	Spring Pkg. Co.
Wheels one-wear steel	Carnegie-Illinois	Carnegie-Illinois	Carnegie-Illinois
Pipe insulation	Union Asbestos	Union Asbestos	None
Steam end valves	Vapor	.....	.....

* Side frames on 10 cars.



The Aluminum Cars from the Top



Aluminum Box Cars for the Alton, Rock Island and the M. & St. L.

vided in the design and these, as well as the door posts, are large extruded sections which keep outward deflection of the car sides under full load within desired minimum limits, thus assuring, among other things, easy-operating side doors. The side posts in conjunction with side sheets of substantial thickness, are firmly riveted in place and constitute, in effect, deep girders which keep the deflection of the car at the center under heavy loads within conventional limits. Stresses are carried across the door openings by continuous side plates of large cross section at the top and bulb angle reinforcement of the side sills at the bottom.

The car ends, of three-piece riveted construction, with extruded aluminum W-corner posts, are designed with ample strength to hold lading against any ordinary road service or switching shocks; the bottom, intermediate and top sheet thicknesses are 5/16 in., 1/4 in., and 3/16 in., respectively. In fact the car is designed for long life with minimum normal service attention and the ability to resist heavy stresses and to hold its shape even in case of derailment.

Details of the Construction

Aluminum of which the car is made includes the high-strength corrosion- resistant alloy R-301 for sheathings, ends, roof and doors; 17S-T for extruded shapes; R-303-T275 for follower plates; and A 17S-T for rivets. The center sill is made of two A. A. R. carbon-steel 72.4-lb., Z-sections, extending between the steel striking castings and having the top flanges joined by welding. The side sills are 6-in. by 3½-in. by 5/16-in. extrusions, extending the full length and reinforced at the bolsters with a 1/4-in. steel channel pressing and under the door opening with 6-in. by 3½-in. by 5/16-in. steel bulb angles.

The body bolsters are built up of 1/4-in. alloy-steel pressings, the top and bottom pans, having their edges joined by continuous welding. A top cover plate extends over the center sills at each bolster and is welded to the pans. Combined bolster center fillers and rear draft stops are of alloy cast steel. Front draft stops are cast integral with the striking castings. The bottom bolster pan is reinforced over the side bearing with built-in welded steel construction.

Cross bearers are built up of 1/4-in. alloy steel pressings, the top and bottom pans having their edges joined by intermittent filler pieces and continuous welding. Bottom tie plates, 8½-in. by 5/16-in., are applied under the center sills and 2-in. by 2-in. by 1/4-in. angle fillers are welded between them. Cross ties are pressed pans made of 3/16-in. alloy steel riveted to the center and side sills. Corner braces are 1/4-in. aluminum pressings. Floor stringers, four per car, are 4-in. aluminum Z-shapes, with 5-in. Z-shapes at the doorway. Body center plates are forged steel, made to A. A. R. dimensions.

The car underframe is a composite structure, but primarily steel. Taking the Alton car, which may be considered typical, the underframe complete, including underneath piping and air-brake

The Floor Stringers in the Underframe, the Side Posts and Ends Are Aluminum

equipment, weighs 10,600 lb. Aluminum parts used in this underframe, including corner braces, floor stringers, end sills, etc., weigh only 520 lb., so the difference, or 10,080 lb. represents the weight of steel.

The side construction consists of ⅛-in. aluminum sheathing applied over extruded aluminum posts. There are 24 intermediate posts as compared with 16 posts in conventional steel cars, thus giving ample strength to resist bulging loads. Reference has been made to the substantial end construction and the roof which is designed for aluminum, riveted. The running boards are aluminum, applied with ½-in. aluminum bolts and designed to meet A. A. R. requirements. The car doors are aluminum with aluminum trim, but operate on steel tracks and have steel fixtures. Aluminum, in doors of the Rock Island and the M .& St. L. cars, for example, weighs 446 lb. and steel 292 lb.

Steel underframes of the car are painted with regular primer paint and one coat of car cement is applied. Aluminum parts of the underframe are painted with a zinc chromate primer and one coat of car cement is applied. The inside surfaces of the superstructure from the side sill to 15 in. in height are painted with a zinc chromate primer. All aluminum surfaces in contact are painted with zinc chromate primer, as a sealer. The contact surfaces between aluminum and steel are painted with zinc chromate primer on the aluminum and an ordinary primer coat on the steel surface. Roof joints are sealed with Alumilastic and all other joints caulked with the same material. No paint is used on the car exterior except stenciling which is applied after a light etching of the surface beneath the letters and numbers.

Aluminum rivets used in the car construction are driven cold up to ⅝ in. in diameter with pressure riveting machines wherever possible. Where pneumatic hand hammers have to be used the rivets are driven hot. All floor bolts and clips, lining strip bolts, and stud-rivet bolts and nuts are aluminum. One interesting advantage of the use of aluminum floor bolts to hold the tongue-and-groove flooring is that the car may be loaded with explosives without covering the bolt heads, as ordinarily required by I. C. C. Bureau of Safety regulations.

The journal-box lids, made of aluminum, also constitute a safety feature, as they reflect light from automobile headlights at night and indicate the presence of cars on highway crossings. Spring packing, with aluminum springs, is kept in place by Holdrite packing retainers, made of aluminum spring material R-303-T 315. The new type of coupler-centering device which is installed gives spring support to the coupler in both vertical and lateral movement, an especially desirable feature for the cars when used in passenger train service.

The co-operation of specialty manufacturers was secured in developing equipment for the Reynolds aluminum box car and the same dies were successfully used in making the specialties of aluminum as would have been required with steel.

Material Used in Reynolds Aluminum Box Car Bodies

Aluminum Parts

Side sheets	Draft gear carriers
End sheets	Floor bolts
Roof sheets	Floor clips
Roof carlins	Nailing piece bolts
Door sheets	Rivets in superstructure
Door trimmings	Hand brake housing
Running board	Journal box lids
Brake step	Defect card holders
Intermediate post	Routing board brackets
Door posts	Placard board brackets
Corner posts	Spring packing springs
Side sills	Journal-box packing retainers
Side plates	Brake badge plate
Floor supports	Builder's badge plate
Diagonal braces	Marker lamp brackets
Follower plates	

Steel Parts

Center sills (carbon)
Bolster and crossbearers (alloy)
Bolster center fillers
Striking castings and draft lugs
Couplers and draft gears
Cross-ties (alloy)
Center plates
Bulb angles at doorways
Door track and fixtures
Air brake equipment
Safety appliances

31 aluminum parts weigh 7,017 lb.,* or 28.8 per cent of car-body weight.

11 steel parts weigh 10,823 lb.,* or 44.5 per cent of car body weight.

Other materials, including lumber, insulation, car cement, paint, etc., weigh 6,500 lb.,* or 26.7 per cent of car body weight.

* Rock Island car—Weight would be slightly different for the other cars.

Detail Weights of Reynolds Aluminum Box Cars Built by Mt. Vernon for Three Railroads

	Alton* (lb.)	Rock Island† (lb.)	M. & St. L.‡ (lb.)
Underframe, primarily welded steel except floor supports	10,600	10,600	10,200
Side sheets, side sills and all posts, made of aluminum	3,995	3,998	3,996
Ends, 3-piece aluminum	1,028	1,028	1,028
Roof, complete aluminum	833	833	833
Doors, aluminum except for steel track and fixtures	652	738	738
Running boards and brake steps, made of aluminum	186	186	186
Safety appliances, steel	377	377	377
Hand brakes, aluminum	69	80	72
Lumber, insulation, car cement and paint (1)	6,500	6,500	6,570
Weight of all aluminum parts (2)	6,969	7,017	7,015
Weight of all steel parts (3)	10,771	10,823	10,415
Total car body weight, (1)+(2)+(3)	24,240	24,340	24,000
Weight of trucks	13,760	18,560	13,000
Light weight of car	38,000	42,900	37,000

* These cars have AB1B brakes, steam and signal lines, Cardwell stabilized double-truss spring-plank trucks, hollow axles and one-wear steel wheels.

† These cars have AB1B brakes, steam and signal lines,, Barber stabilized swing-motion trucks, solid axles, one-wear steel wheels and roller bearings (5 cars).

‡ These cars have AB brakes, hollow axles, Barber stabilized spring-plankless trucks S-2 and one-wear steel wheels.

Safety at Railroad Crossings

Close some crossings and provide gates at others, thus improving safety at less cost than grade separation

By DONALD McNICOL

Chairman, Roselle Park Planning Board, Roselle, N. J.

WITH legislation already on the books which contemplates a national, state and local expenditure of perhaps three billion dollars for road betterments and traffic safety in the early post-war years, there is an immediate need for wide consideration of what is involved.

A portent of the times is that, in the widely presented plans for post-war improvements, an element is that of betterment of railroad grade crossings. It has been argued that, from the safety viewpoint alone, overhead and underpass crossings for streams of traffic at intersections appears as the complete answer; that is, level-crossing elimination. Occasionally when a traffic accident occurs at a crossing, an understandable agitation is launched calling for the elimination of the particular crossing, but planning boards now have available statistics which show the cause and nature of highway accidents. It is astonishing that railroad crossing mishaps contribute so small a share of the total. From state records it would appear that on automobile highways in use for many years there are not many sections of highway, long or short, on which, through the years, an accident of some kind has not occurred, and this is true of overpasses or underpasses. The entire problem of grade-crossing treatment is one which cannot be intelligently generalized. Each crossing area's problem has its own guiding factors.

Qualified engineers have stated that the construction of grade separations at all crossings is quite impossible, because in numerous instances the physical conditions are such that grade separations cannot be built. This is aside from the probable cost of overall separation, which for one state, say the State of Illinois, would total an estimated billion and a half dollars.

In the immediate future there will be earnest co-operation between federal, state and municipal highway depart-

ments; between planning boards and railroad companies in the program looking to the improvement of approaches to grade crossings; to providing grade separation, and to reducing the number of crossings by consolidating traffic channels. By means of route diversions particularly in thickly populated areas, it is often practicable to reduce the number of crossings by closing some of them and concentrating the traffic at other crossings where approaches of adequate width and clearance may be constructed. Once this is done, it becomes practicable to have installed modern traffic control systems equipped with lane gates, visual signals and bell alarms, presenting rights of way for automobile and truck transport as safe as it is humanly possible to make them.

Statistical studies already have been made in communities on high speed lines of railroad having numerous crossings. Plans have been worked out for channelizing traffic by closing the less used crossings, installing adequate protection at the consolidated lanes left open. In municipalities, planning boards have come to realize that numerous outlets (crossings) across railroad tracks are not in reality community assets; that, actually, unprotected crossings are liabilities, certain to become more hazardous with the anticipated growth of post-war highway traffic. Obviously, the cost of level crossing elimination by the construction of overpasses or underpasses varies greatly, depending upon the nature of the approaches, the number of railroad tracks, and the geographical location with respect to business and residence streets already in use. In one state, grade separations have ranged in cost from $20,000 to $1,000,000. On the other hand, highly satisfactory automatic grade crossing protection installations in the same state, have varied between $1,000 and $10,000, with an average of about $2,600 per crossing. Ordinarily, from 35 to 40 crossings can be provided with automatic protection at a total cost approximating that of a single grade elimination installation.

In congested areas where there are crossings having reflectorized crossbuck signs and also occasional crossings having adequate automatic signal protection, motorists soon develop the habit of using the automatic signal crossings in preference to the more hazardous lanes. A minute or more of time taken in order to arrive at a properly protected channel is not considered a delay by careful car drivers.

Short-Arm Gates

Automatic signal protection equipment developed within present years now includes important improvements which service and use have indicated as desirable. Automatic short-arm gates, operated in association with flashing-light signals wherever installed are proving satisfactory. The introduction of short-arm gates at once removed an inherent difficulty of the older gate types—that of automobiles being at times trapped on the tracks, between the lowered arms.

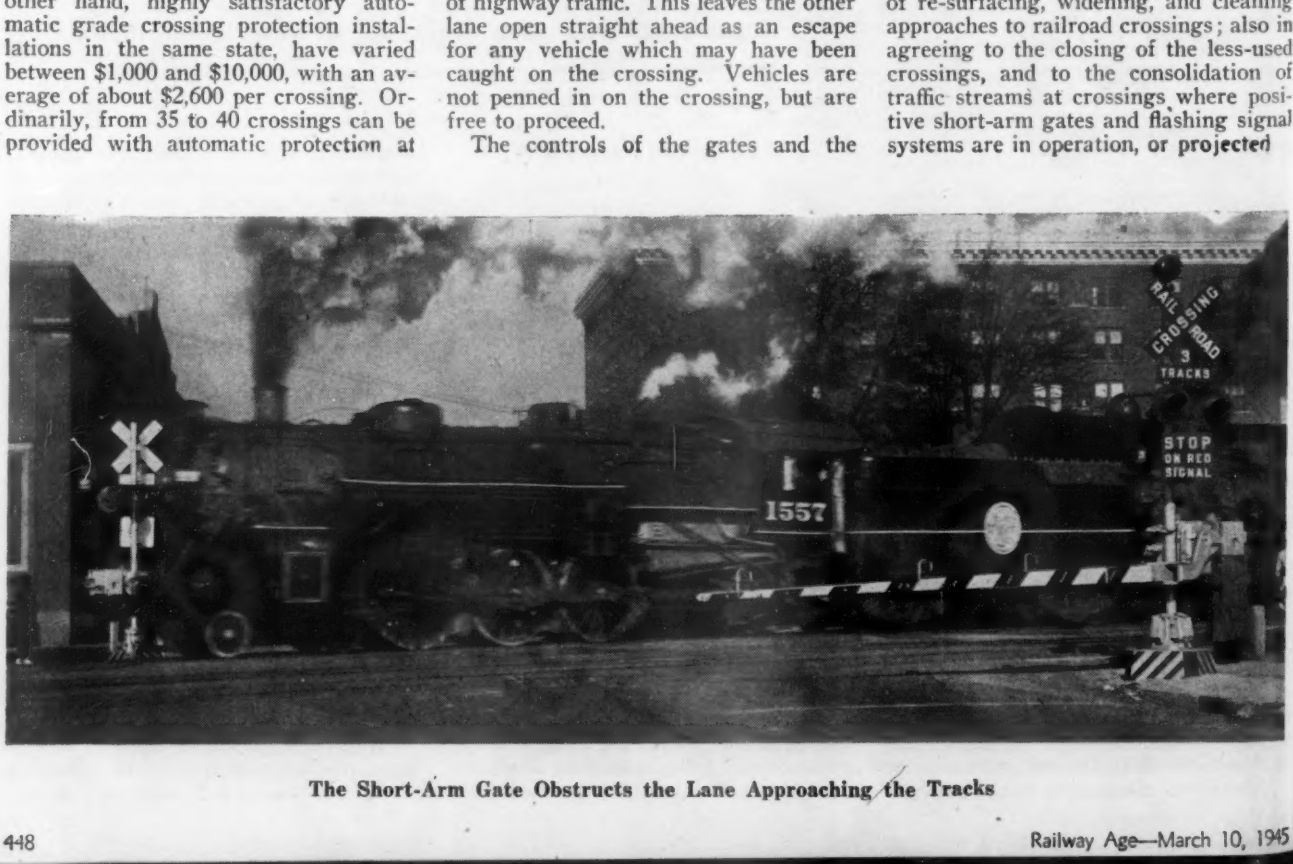
The short-arm gates block only the traffic on the right-hand side of the roadway. On multiple-track main-line railroads the short-arm gate serves to prevent accidents attributable to the two-train hazard. That is, when one train is just clearing the crossing while a train on another track is approaching the crossing. Even the destruction of the gate by a reckless driver or a car out of control does not interfere with the proper functioning of the visual flashing signals, which continue so long as necessary. The physical barrier, the short-arm gate, extends to the center of the pavement across each approach lane of highway traffic. This leaves the other lane open straight ahead as an escape for any vehicle which may have been caught on the crossing. Vehicles are not penned in on the crossing, but are free to proceed.

The controls of the gates and the visual signals are effected automatically by track circuits when trains are on the tracks. Approach control sections are sufficiently long so that when trains are operated at the maximum speed permissible, the pre-warning signal flashes at least 20 seconds before the approaching train is due to arrive at the crossing. The gates also are lowered to the "stop" position several seconds before the train arrives, and the controls are arranged for operation by locomotives or trains in either direction on all tracks. As Warren Henry, assistant chief engineer of the Illinois Commerce Commission, has stated, "The outstanding characteristic of the automatic gate is the certainty of its operation and its natural control of highway traffic."

Public Cooperation Foreseen

With the rapid growth of automobile and truck traffic over public highways through the years, many of which highways somewhere must cross steam or electric railroads, the opinion has sometimes been expressed that the railroad companies have carried the entire burden of cost of crossing protection too long.

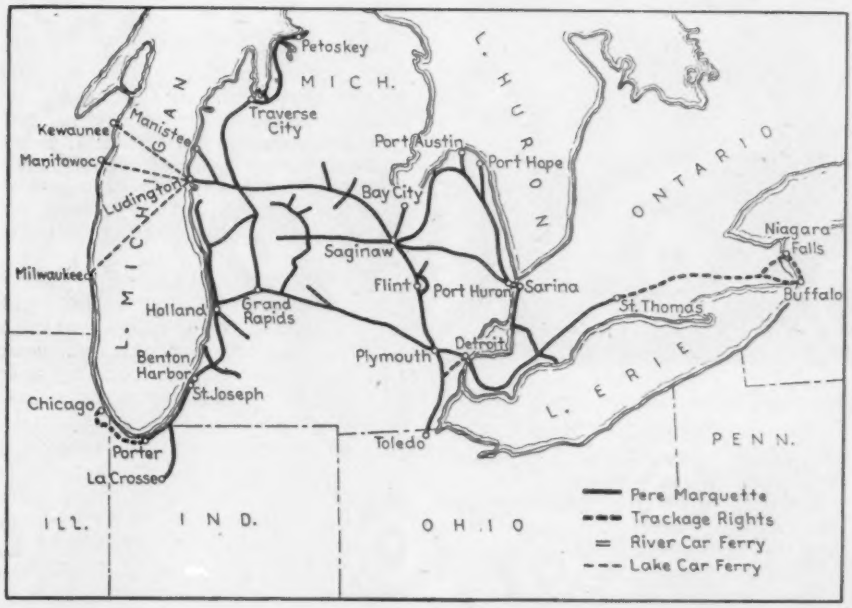
A time has arrived when the railroads are not called upon to defray the entire cost of these safety measures everywhere. Gradually, federal and state highway departments have been taking a liberalized view of the overall problem and what is to be done about its solution. State, county and municipal planning boards and commissions are now alive to the problem in their respective areas, and there is little doubt that there will be cooperation with the railroads in the near future, particularly in the matters of re-surfacing, widening, and cleaning approaches to railroad crossings; also in agreeing to the closing of the less-used crossings, and to the consolidation of traffic streams at crossings where positive short-arm gates and flashing signal systems are in operation, or projected



The Short-Arm Gate Obstructs the Lane Approaching the Tracks

Pere Marquette Reestablishes Credit

Policy of pruning debt structure, initiated in October, 1942, signally successful as new 3⅜ per cent bonds sell at premium—Annual interest charges have been halved since 1934



ON February 19, the Pere Marquette awarded $50,000,000 of 35-year first mortgage bonds to a syndicate of 51 underwriting firms headed by Blyth & Co. on a competitive bid of 99.71 for a coupon rate of 3⅜ per cent, an indicated average annual cost to the company of approximately 3.383 per cent. The advantageous terms received on this refinancing result from the reestablishment of the railroad's credit and mark with signal success a policy of debt reduction through the purchase of first mortgage bonds at prevailing discounts initiated by the board of directors in October, 1942, when it became evident that the road's earnings were on the upswing.

The new 3⅜ per cent bonds, dated March 1, 1945, and due March 1, 1980, were reoffered to the public at 100.92 and accrued interest. Thus the Pere Marquette, at one time considered by many investors to be in the "borderline" class, whose 4 and 4½ per cent bonds sold on the New York Stock Exchange at 35 and 42 point discounts in 1943 and at 12 and 18 point discounts in 1944, now is firmly established in the "good credit" class, with 3⅜ per cent bonds selling at a premium.

Sale of the new issue, which nets the road 49,855,000, clears the way for the refinancing of all of the company's outstanding first mortgage debt, aggregating in principal amount $52,467,335. The redemption requirement of this debt amounts to $54,867,302 and additional funds for its retirement will be supplied from the company's treasury to the extent required. The entire amount is evidenced by the following three outstanding series of first mortgage bonds—$26,442,335 of series A 5s due July 1, 1956, callable at 105 for a total redemption requirement of $27,764,452; $4,468,000 of series B 4s due July 1, 1956, callable at 100 for a total requirement of $4,468,000 and $21,557,000 of series C 4½s due March 1, 1980, callable at 105 for a total requirement of $22,634,850.

Through the present financing the Pere Marquette will effect a $2,467,000 reduction in its mortgage debt, bringing the total reduction in non-equipment debt achieved by the railroad since 1934 to $19,195,000 or 28 per cent. With completion of the present financing, the net reduction in total debt, including equipment obligations, since 1934 will be $17,495,000 or 23 per cent. Annual interest charges will have been almost halved, the net reduction amounting to $1,628,000, or 47 per cent. Table I herein shows debt and interest charges at various past dates, and after giving effect to sale of the $50,000,000 of series D bonds and retirement of the series A, B and C bonds. A summary of earnings in the past 10 years, showing also earnings coverage for fixed charges, is presented in Table III.

In addition to the $57,472,000 of mortgage debt and equipment obligations, capitalization of the company to be outstanding in hands of the public will consist of 23,628,768 of prior preference and preferred stocks on which there are substantial dividend accumulations and $45,044,872 of common stock. Division of the $126,145,640 of total capitalization is shown in Table II.

On December 31, 1944, the number of units in the company's locomotive, car, ferry, and service equipment, with the number subject to equipment obligation shown in parentheses, was as follows: 291 locomotives, including six Diesel switchers, (58); 14,694 freight cars (4,818); 117 passenger cars (10); two river ferries; six lake ferries; and 555 service equipment. Eleven of the passenger cars and 99 of the freight cars were leased to the Chesapeake & Ohio. As of the year-end, the average age of the locomotives was 24 years and, of the freight cars, 15 years.

Properties in Michigan

The Pere Marquette operates approximately 1,949 miles of railroad in the United States and Canada, of which 1,503 are owned, 199 are leased from a wholly-owned subsidiary, eight are used under trackage rights from a wholly-owned subsidiary, three are operated jointly with another railroad on leased land and 236 are operated under contracts for joint use with others. The company also conducts car ferry service across the Detroit river and on three routes across Lake Michigan consisting of 225 route-miles. It operates more mileage in the State of Michigan than any other railroad, with its lines of heaviest traffic between Chicago and the Niagara frontier, and between Toledo, Ohio, and Ludington, Mich., via Flint and Saginaw.

Control Is with C. & O.

The Chesapeake & Ohio owns 13,950 preferred shares and 313,900 common stock shares of the Pere Marquette and the Western Pocahontas Corporation, a wholly-owned subsidiary of the C. & O. owns 6,000 shares of the preferred stock. These shares aggregate 48.61 per cent of total shares outstanding, all of which are entitled to equal voting rights.

Since the beginning of 1940, the Pere Marquette has expended from treasury funds approximately $4,700,000 on road improvements, chargeable to capital account. This program included construction of a complete new engine terminal at St. Thomas; extension and improvements of engine terminals at other locations; installation of centralized traffic control on 30 miles of the line between Grand Rapids and Detroit; improvements in block signal system on portions of heavy traffic lines; extension of seawall protection at St. Joseph, Mich.;

Table I—Debt Outstanding in Hands of Public

	After Sale of Series D Bonds	December 31 1944	1936	1934
Mortgage Debt	$50,000,000	$52,467,000	$64,535,000	$64,547,000
Collateral Notes and Loans Payable	none	none	672,000	4,648,000
Total non-equipment debt	$50,000,000	$52,467,000	$65,207,000	$69,195,000
Equipment Obligations	7,472,000*	7,624,000	5,300,000	5,772,000
Total Debt	$57,472,000	$60,091,000	$70,507,000	$74,967,000
Interest Charges	$1,837,000	$2,723,000	$3,270,000	$3,465,000

* Estimated.

Table II—Capitalization

Mortgage Debt and Equipment Obligations	
First Mortgage 3¼% Bonds, Series D, due March 1, 1980	$50,000,000(a)
Equipment obligations, various rates and maturing through 1959 in varying amounts	7,472,000*
Total Mortgage Debt and Equipment Obligations	$57,472,000
Capital Stock	
5% Cumulative Prior Preference, 111,999.24 shares, par value $100 per share (b)	$11,199,924
5% Cumulative Preferred, 124,288.44 shares, par value $100 per share (c)	12,428,844
Common, 450,448.72 shares, par value $100 per share	45,044,872
Total Capital Stock	$68,673,640
Total Capitalization	$126,145,640

* Estimated.
(a) An additional $10,000,000 of series D bonds will be held in the company's treasury.
(b) Unpaid dividend accumulations on this stock as of February 1, 1945, were $4,059,972, or $36.25 per share.
(c) Unpaid dividend accumulations on this stock as of February 1, 1945, were $8,389,470, or $67.50 per share.

strengthening of various bridges; and construction and extension of passing tracks and yard tracks at various locations.

Work now in progress includes centralized traffic control on an additional 27 miles of main line, estimated to cost approximately $135,000 and expected to be in service by March 31 of this year. The installation of centralized traffic control on an additional 48 miles of main line, estimated to cost approximately $210,000, also has been authorized and is expected to be completed during 1945. These two sections of C. T. C. are located between Porter and Grand Rapids. A new bridge is being constructed across the Saginaw river at Saginaw and will be in service about April 1. The estimated cost of this bridge is $885.000, of which approximately $475,000 had been spent at December 31, 1944.

The company has ordered for future delivery two Diesel passenger locomotives, 14 lightweight passenger-train cars, one river ferry and miscellaneous equipment, estimated to cost a total of $2,709,690, and has inquiries now out for the acquisition of 10 Diesel switchers to cost about $785,000. Investment in transportation property of the company, its Canadian subsidiary and the Flint Belt Railroad, a wholly-owned subsidiary, increased $43,621,759, or 36.91 per cent, in the 21-year period 1923 to 1943, inclusive, as compared with an increase of 23.81 per cent for all class I railroads and lessors for the same period.

The company's road properties and equipment as a whole have been maintained in good condition. During the past ten years, expenditures for maintenance of way and structures and maintenance of equipment, exclusive of depreciation, retirement, and amortization charges, have been as follows:

	Maintenance of Way and Structures (Exclusive of depreciation, retirement and amortization charges)	Maintenance of Equipment
1935	$3,054,323	$3,405,774
1936	3,378,646	4,034,706
1937	4,186,816	4,274,576
1938	3,431,290	3,281,639
1939	3,824,262	3,925,262
1940	4,116,580	4,277,233
1941	4,543,130	5,067,451
1942	4,910,184	5,696,254
1943	7,297,560	6,073,770
1944	8,953,105	6,495,375

Traffic and Revenues

As of December 31, 1944, the company's current assets amounted to $24,711,738. including $7,684,135 cash and $7,297,500 temporary cash investments, and current liabilities $15,021,513. Total earned surplus—unappropriated amounted to $18,008,199 having increased steadily from $4,107,837 on December 31, 1938.

In each of the past ten years, freight traffic accounted for 88 to 92 per cent of the Pere Marquette's operating revenues. The railroad draws highly diversified traffic from agricultural sections and from a majority of the principal industrial cities in Michigan. Approximately three-fourths of the traffic received from connecting lines comes to the Pere Marquette at Toledo, Chicago, Lake Michigan ports and the Niagara frontier and about two-thirds of the traffic delivered to connecting lines goes through those same gateways. Since the beginning of the war, the movement of petroleum products has served to increase greatly the receipts at Chicago. Currently about 30 per cent of its total tonnage originates on the Pere Marquette, of which 12 per cent terminates on line and 18 per cent is delivered to connections. Of the remaining 70 per cent received from connections, 39 per cent terminates on line and 31 per cent is delivered to connections. About 60 per cent of gross freight revenues are derived from manufactures and miscellaneous, 10 per cent from agricultural products, 20 per cent from mine products and 10 from other sources. Approximately 16 per cent of the loaded cars received from connections come from the Chesapeake & Ohio and Pere Marquette delivers to that road about 4 per cent of the loaded cars delivered to connections. About one-fifth as many loaded cars are delivered to the Chesapeake & Ohio as are received from that road. Coal represents the bulk of the traffic received by Pere Marquette from the C. & O.

New Industry and Post-War Era

Much consideration has been directed toward the possible merger, consolidation, or other unification of the Pere Marquette with the Chesapeake & Ohio, the New York, Chicago & St. Louis and the Wheeling & Lake Erie. The Chesapeake & Ohio's stock interest in the Pere Marquette has been indicated above. The C. & O. also owns 57 per cent of the common stock of the Nickel Plate and certificates of deposit representing the beneficial interest in approximately 35 per cent of the Wheeling & Lake Erie stock. The Nickel Plate owns certificates of deposit for almost 33 per cent of the Wheeling & Lake Erie's stock. As yet, no plan for combination of the Pere Marquette with any of these roads has been presented to the various boards of directors.

During the three war years of 1942-44 a total of 203 new industries have

(*Continued on page 454*)

Table III—Summary of Earnings

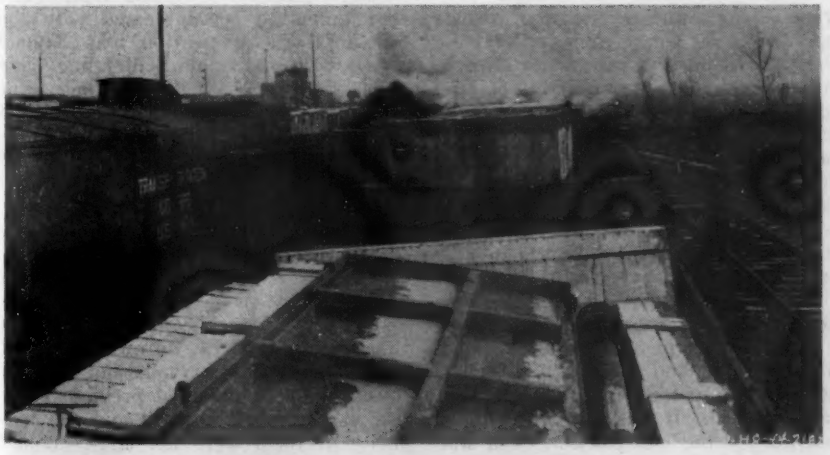
Years	Railway Operating Revenues	Railway Operating Expenses	Operating Ratio %	Net Railway Operating Income	Income Available for Fixed Charges	Fixed Charges	Net Income
1944	$56,302,777	$43,219,772	76.8	$5,010,307	$5,804,172	$2,792,096	$3,012,076
1943	55,052,804	39,197,743	71.2	6,003,088	6,680,863	3,061,343	3,619,520
1942	44,311,307	32,544,485	73.5	6,275,279	6,855,345	3,286,279	3,569,066
1941	39,048,003	28,362,515	72.6	6,115,395	6,532,235	3,295,329	3,236,906
1940	33,007,016	24,939,823	75.6	4,063,208	4,524,287	3,271,220	1,253,067
1939	30,232,639	23,478,759	77.7	3,352,085	3,635,767	3,307,611	328,156
1938	25,444,602	21,487,335	84.5	853,602	1,089,989	3,349,792	2,259,803*
1937	32,229,110	24,929,785	77.4	4,461,045	5,002,128	3,332,270	1,669,858
1936	32,459,080	23,515,961	72.5	5,578,349	6,098,044	3,340,040	2,758,004
1935	28,478,082	21,137,287	74.2	4,828,197	5,100,464	3,467,166	1,633,298

* Deficit.

Army Railroading at Antwerp

(Below) Conductor Sgt. Byrl Woodbard, Palestine, Ill., Signals Engineer, Sgt. Wendell Bawyer, Dumdon, W. Va., (743rd Ry. Op. Bn.) to Move His Train Out of the Port's Yards, Where the Scene Is Described as "One of Feverish Activity," with Transportation Corps Port Battalions and Belgian Civilians Constantly Occupied with the Endless Stream of Supplies Entering the Harbor (Right)

(Right) A Diesel Switching Locomotive on a Trial Run Over a Newly Constructed Bridge, Somewhere in Germany —(Bottom Left) In This Classification Yard, Army Railroaders Make Up Trains for Movement to the Front — (Bottom Right) From the Control Tower Overlooking the Yard, Operations Are Directed by Loud Speaker, and Switches Are Electrically Controlled



U. S. Signal Corps Photos

Eliminates Eight Restrictive Tunnels

Southern Pacific uses its own grading organization to carry out extensive program started several years ago

FOR several years the Southern Pacific has been doing a considerable amount of tunnel-elimination work to remove restrictive clearances, either by line relocation or by "daylighting" the tunnels on their original alinements. The most outstanding feature of the work is that the grading at all of the tunnel-elimination jobs in the program to remove restrictive clearances has been performed by railroad forces, using for the most part an organization of company-owned Carryalls and bulldozers, which has been steadily expanded as the work has progressed. To date, eight restrictive tunnels have been eliminated under this program.

Six of these tunnels were located on the company's San Joaquin Valley route between San Francisco, Cal., and Los Angeles. This is predominantly a single-track line, which was built in 1876. As originally constructed it had 26 tunnels, all of which were located in two relatively short sections of the route, one where it traverses the Tehachapi mountains and the other where it follows the Santa Clara river in Soledad canyon. Most of these tunnels were constructed with timber linings. Eventually, because of the increasing dimensions of loads carried, the clearances in the original tunnels became restrictive. To permit these larger loads to be handled, the company has been enlarging the tunnels to obtain standard clearances, and in connection with this work it has been replacing the timber linings with concrete. In some instances, however, the tunnels were eliminated altogether by daylighting them or by line changes.

The process of enlarging or eliminating the tunnels had progressed to the point where there were only six restrictive tunnels remaining on this line in 1942 when the present program was undertaken. All of these were located in Soledad canyon, being confined to a section of territory about 16 miles long between Russ, Cal., and Saugus. These tunnels were designated as Nos. 17½, 20, 21, 22, 23 and 24.

Extent of the Program

With the outbreak of war, it became more than ever desirable to remove encroachments on the standard clearance diagram, and it was decided to eliminate the remaining restrictive tunnels on the San Joaquin Valley line, and also to remove a number of other restrictive tunnels elsewhere on the system. This latter group included a tunnel, known as No. 13, on the company's Coast route between San Francisco and Los Angeles. Located between Drake, Cal., and Sacate, this was a timber-lined tunnel constructed in 1900, in which the lining had reached the end of its service life. Since the tunnel was restrictive, it was decided, instead of renewing the lining, to eliminate the bore altogether.

The Grading Organization Includes This Rooter for Loosening the Material to Be Excavated

Tunnels Eliminated

Another tunnel on the program was known as Tunnel 0, on the main line of the Sacramento division, which is a link in this company's part of the Overland Route between Chicago and San Francisco. Situated in double-track territory, it carried the westbound main line at a point where the main tracks follow divergent routes. Located between Clipper Gap, Cal., and Applegate, it was constructed in 1873, and was partly lined with concrete. The eastbound track in this same vicinity is carried by a tunnel, known as No. 23, which having been built in 1911 at the time the second track was constructed, has standard clearances.

Work on all of these eight projects has now been completed. In addition, four other tunnels have been programmed for future elimination, including two on the Coast route, one on the Shasta division and one on the Northwestern Pacific, an affiliate of the Southern Pacific.

The recent tunnel work also included the elimination of another tunnel, although in this case it was not restrictive clearances, but rather the need for extending an adjacent siding in connection with the installation of a CTC system, that brought about the decision. This was Tunnel No. 11 on the San Joaquin Valley route, which was located in the Tehachapi mountains between Walong, Cal., and Marcel. This tunnel was 121 ft. long in solid rock, and was not lined. It was eliminated under contract by the construction of a line change, 0.2 of a mile long, which involved the handling of 18,350 cu. yd. of material.

In all of the projects completed to date in the current program, the complete elimination of the tunnels was the solution adopted, rather than the enlargement of the existing bores. The use of this method is doubtless due to the fact that modern equipment and methods have so greatly reduced the cost of grading that, considering all factors, it is the most economical solution where conditions are favorable to its use. This method also has the advantage that it permits changes in alinement to be made if the existing line through the tunnel incorporates excessive curvature.

The current tunnel work on the Southern Pacific is also noteworthy by reason of the fact that all grading (except at Tunnel 11 mentioned above) has been performed by railroad forces using the company's own equipment. In this work, a grading organization embodying tractor-drawn Carryalls for excavating and hauling the material was used at seven locations, namely, the six tunnels on the San Joaquin Valley line, and Tunnel 13 on the Coast line. At these locations the material encountered was such that it could readily be handled by equipment of this type, with the aid of a rooter for loosening it. However, at Tunnel 0 on the Sacramento division, the material to be moved consisted largely of solid rock requiring blasting, and for handling the grading on this job the company used an outfit of dump trucks loaded by a crawler shovel.

In that phase of the tunnel work in which the grading was conducted with Carryalls, the first project was carried out in 1942 with a small organization, including only two Carryalls, but from time to time additional machines were added until at present the organization contains five units of this type. The first tunnel to be eliminated with the aid of this organization was Tunnel 23 on the San Joaquin Valley line. This tunnel, which was 189 ft. long, was eliminated by converting it to an open cut on the original alinement, an undertaking that entailed the handling of 26,000 cu. yd. of material.

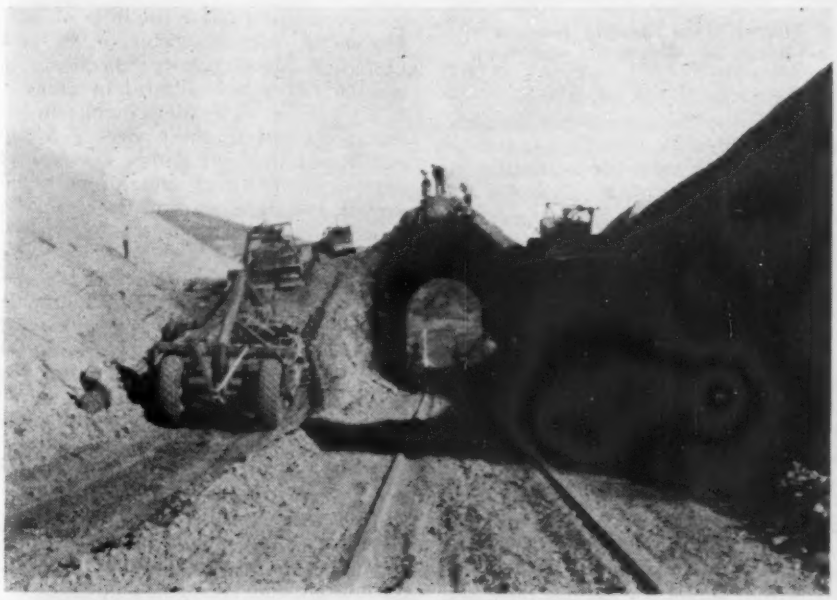
Started with Two Carryalls

At the time the company made its decision to perform the grading work at the tunnel jobs with its own forces, it had available 11 Carryalls, but most of these had been obtained previously for use in maintenance work and the majority of them were not large enough

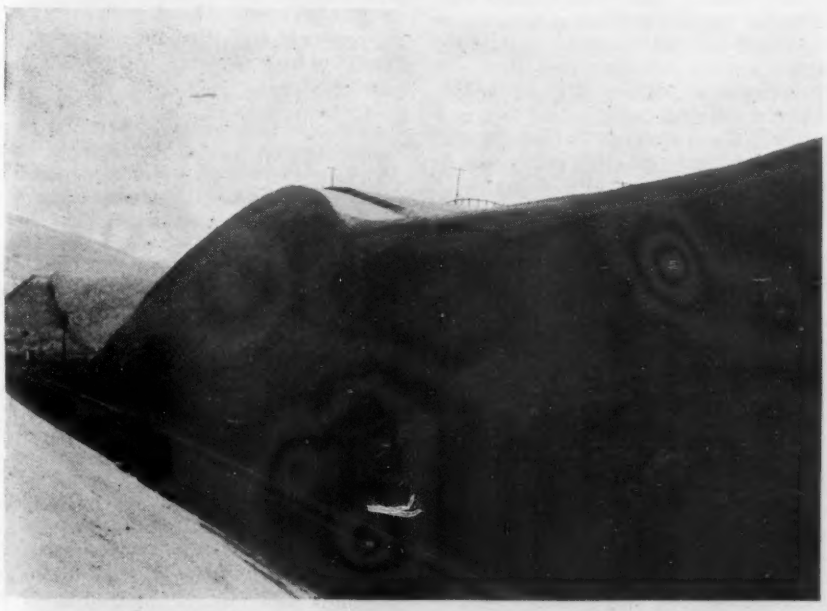
to be used economically on heavy grading jobs. Specifically, nine of the units were of the smaller sizes, and only two of them, being 12-yd. machines, were considered of sufficient size to warrant their being used on the tunnel work. Hence, when the grading work was undertaken at Tunnel 23 the organization was built around the two 12-yd. Carryalls, each of which was drawn by a D8 (95-hp.) Caterpillar tractor. It also included two other Caterpillar tractors, a D8 and an R5 (54 hp.), both equipped with dozer blades, the D8 being used principally for pulling a rooter and pushing the Carrayalls while loading, and the R5 for the shaping and spreading work.

The second tunnel to be eliminated was No. 13 on the Coast route. This tunnel was 715 ft. long, and was on tangent throughout its length. Like No. 23 it was eliminated by converting it to an open cut on the original alinement, which required the handling of 174,350 cu. yd. of material. This project was carried out by the same grading organization that was used on Tunnel 23, except that it also included an 8-yd. Carryall drawn by a D7 (80-hp.) Caterpillar tractor that was rented for this purpose.

When work on Tunnel 13 had been completed, the grading organization returned to the San Joaquin Valley line to undertake the elimination of Tunnel 24. Constructed on a curved alinement, this tunnel was 249 ft. long. It was eliminated by means of a line change, about 0.5 of a mile long, on an improved alinement, which required about 62,700 cu. yd. of grading. The only change in the grading organization on this job was the substitution of a newly-purchased company-owned tractor to replace the rented D7 Caterpillar unit that had been used to draw the 8-yd. Carryall at Tunnel 13. The machine acquired for this purpose was an Allis-Chalmers 70-hp. Diesel tractor.



Showing the Company Grading Organization at Work on the Daylighting of Tunnel 13 on the Coast Division



This View at Tunnel 13 Was Taken as the Work of Converting It into an Open Cut Was Being Completed

Two 18-Yd. Machines Added

Next, the organization was transferred to the site of Tunnel 20, which was 511 ft. long. This tunnel was eliminated by means of a line change, 0.3 of a mile long, on an improved alinement, a project that required about 115,300 cu. yd. of grading. At the time this work was carried out, the grading organization had been augmented by the addition of two 18-yd. Carryalls, each drawn by a D8 tractor, and the 8-yd. Carryall had been assigned to other work. Thus, after these changes, the principal units of the organization consisted of the two original 12-yd. Carryalls, the two new 18-yd. machines, all drawn by D8 tractors, and the two original bulldozer outfits, one a D8 and the other an R5 machine.

After completion of the work at Tunnel 20 the grading outfit was sent to the site of Tunnel 17½. This tunnel was 181 ft. long, and was also eliminated by the construction of a line change, 0.4 of a mile long, which entailed about 32,400 cu. yd. of grading. Before being assigned to this project the grading outfit was augmented still further by the addition of a 24-yd. Carryall drawn by a D8 tractor. Subsequently, work on Tunnels 21 and 22 on the San Joaquin Valley line was undertaken and completed.

It is recognized that the grading organization as used on the later tunnel jobs was somewhat out of balance in that it did not include sufficient heavy tractors for operating the rooter and for pushing the Carryalls when loading. In fact, at times it was necessary to do the rooting at night in order to release a D8 tractor during the day for pusher service. However, owing to war-time limitations on the sale of crawler equipment, it was not possible to acquire all the necessary equipment for a well-balanced organization. It was considered desirable, therefore, to have two additional D8 tractors, one of which would be used to replace the R5 tractor in order that, in the event of the failure of a tractor hauling a Carryall, a substitute machine of sufficient capacity would be available. One of these additional D8 tractors has already been acquired, although it has not yet been possible to obtain one to replace the R5 machine.

The principal units of the Southern Pacific grading organizations now include one 24-yd., two 18-yd., and two 12-yd. Carryalls, all drawn by D8 Caterpillar tractors, and three bulldozer out-

Progress View of the Grading Work at Tunnel 24 on the San Joaquin Valley Line, Which Involved a Change of Alinement

fits, including one R5 and two D8 tractors, of which the former is eventually to be replaced by a D8 machine. Other units of equipment in the organization include a rooter, a sheep's foot roller, a 315-cu. ft. wheel-mounted air compressor, a wagon drill, a 4-inch. gasoline-engine driven centrifugal pump, and a sprinkling outfit consisting of a tank mounted on a motor truck. The outfit is a well-equipped, completely-integrated organization capable of performing grading work in an efficient and economical manner. The methods used are in accordance with the latest practices. For instance, in building embankments the material is placed and compacted in layers 6-in. to 8-in. thick, and if it is excessively dry it is sprinkled to settle the dust and to obtain maximum compaction.

While this grading organization has been described mainly in connection with the tunnel-elimination work, the intention of the railroad is to use it on any type of work for which it is suitable and available. In fact, during intervals between tunnel jobs, the organization, either in whole or in part, has been used for various other types of work. such as the removal of slide material from tracks, the repairing of damage caused to the roadbed by high water, the construction of industry tracks, and for grading work in connection with line-change projects. The amount of such work to be done in the future is expected to be such that no difficulty is anticipated in keeping the organization busy at all times. It was the prospect that there would be a large amount of grading to be done over a period of years, coupled with the conviction that it could be performed most economically with company forces and equipment, that led to the decision to develop the grading organization.

The grading organization is composed of 13 men, including an assistant engineer who is assigned to the work as the man in charge; eight tractor operators, one of whom functions as the foreman; two additional operators whose function will be described later; and two mechanics, one a welder, who make any necessary repairs to the equipment. The practice is to work the grading organization 10 hr. daily, starting at 7 a.m. However, the two extra operators do not start work until 10 a.m., being engaged from then until noon on miscellaneous work and odd jobs, such as handling supplies or helping with repairs. During the noon hour these men take over two of the Carryalls and operate them until the regular operators return from lunch. At quitting time in the afternoon the regular operators leave their machines, with the engines running, wherever they happen to be. The two extra operators, who remain on the job until 8 p.m., bring the machines to a central point where they refuel and service them and, in general, prepare them for the next day's work. To expedite the making of any repairs that may require new parts the road's purchasing department has issued a standing order against the nearest agency handling new parts for the equipment. When it is desired to move the grading organization to a new location, the required number of flat cars is ordered and the equipment is loaded by means of skids.

Use of Dump Trucks

For grading jobs where the use of dump trucks is indicated, such as where the material to be handled consists largely of rock or where a considerable haul is involved, this company maintains a fleet of 32 dump trucks ranging in capacity from 2½ to 10 yd. As already mentioned the grading work at one of the tunnel jobs, that at Tunnel 0 on the Sacramento division, was carried out with company forces using dump trucks as the hauling medium. The organization used on this job included two 1¼-yd. steam-driven crawler shovels, six 4½-yd. dump trucks, a tractor bulldozer for keeping the roads in the proper condition and for spreading the material dumped from the trucks, and a compressor for supplying compressed air for drilling, which was done with jack-hammers.

The tunnel-elimination work and the development of the grading organizations were initiated under the general supervision of the late W. H. Kirkbride, then chief engineer of the Southern Pacific, and have been continued under the direction of his successor, E. E. Mayo. R. B. Chapman, supervisor of equipment and welding, has direct supervision over matters relating to the acquisition and assignment of the equipment.

Pere Marquette

(*Continued from page 450*)

been established along the lines of Pere Marquette, accounting for 87,000 cars of freight. In the year 1944 alone, 57 new industries located on the railway.

With the growing number of new industries added to those already firmly established in the territory served and the prospect of a continuing proportional growth in future years of the railroad's so-called "overhead business," the post-war era, trafficwise, may be viewed with a degree of optimism. In this connection, it is to be noted that, following World War I, Pere Marquette carried more revenue ton-miles of freight in 1919 than in 1918, and more in 1920 than in 1919. It does not follow necessarily that this experience will be repeated, but it is reasonable to assume that a great deal of the slack which may result from the cessation of war-time manufacture will be taken up by the large scale production of goods and materials to meet pent-up civilian demands, rehabilitation and reconstruction requirements. The center of the automotive industry is in Michigan and with post-war prospects of large increased production in that and other local industries, the management feels that the post-war period may be considered with confidence.

* * *

CAPTURED LOCOMOTIVES.—The first three locomotives taken from the Germans have been named for the three American generals primarily concerned with supplying the northern American armies, it has been learned from U. S. Forces, in Belgium. Maj. Gen. Frank S. Ross, chief of the Transportation Corps in the European Theater; Brig. Gen. Clarence L. Burpee, commander of the 2nd Military Railway Service, and Brig. Gen. Ewart G. Plank, commander of the advance section Communications Zone, forward supply echelon, were presented with the locomotives at a ceremony in a large communication center in eastern Belgium. Captured by the 708th Railway Grand Division, the locomotives were renamed "General Ross' Raider," "General Burpee's Buzzer" and "General Plank's Pride." General Ross also was presented with the first railroad ticket to Berlin to be issued to an American soldier. It is good from West Aachen.

Carriers Accept 33 Clear Radio Channels

Federal Communications Commission proposals receive approval of railroads with requests for only minor changes

ON January 16, 1945, the Federal Communications Commission issued a report bearing the title, "In the Matter of Allocation of Frequencies to the Various Classes of Non-Governmental Services in the Radio Spectrum from 10 Kilocycles to 30,000,000 Kilocycles," (Docket No. 6651). This report proposed that the railroads be assigned 33 clear channels in the 156-to-162-megacycle band and that they share certain other channels in the television and other bands (reviewed in *Railway Age* of January 20, page 191).

At a hearing held in Washington on February 28-March 2, all interested parties were given opportunity to voice their opinion of the Commission's proposals. The railroads' reply was offered in a joint brief prepared by the Association of American Railroads and Committee 7, Railroads' Radio Communications Services, Panel 13, Radio Technical Planning Board.

The commissioners assigned to the hearing were Paul A. Porter, chairman; E. K. Jett, Paul A. Walker, Norman S. Case, C. J. Durr, and Ray C. Wakefield, five members sitting through all of the proceedings. The railroads' joint brief was presented by William J. Milroy, attorney, Atchison, Topeka & Santa Fe, acting as counsel for the Association of American Railroads. In offering the brief, Mr. Milroy complimented the Commission on its fairness and thoroughness. He said the Commission's conduct was above all possible criticism and that this endorsement should be extended to all members of the Commission's legal and engineering staff. He expressed the hope that the Commission would accede to the railroads' request as stated in the brief and that the railroads would take full advantage of the opportunities afforded by the channel assignments. The following is the joint brief:

Railroads' Reply to F. C. C.

1.—In its proposed allocation of frequencies to the railroads, dated January 15, 1945, the Commission states: "As in the case of other services in this portion of the spectrum, an average channel width of 60 kc. is assumed. It is further assumed that adjacent channels will not be used in the same area." We do not fully understand the Commission's statement in respect to 60 kc. being assumed for other services in this portion of the spectrum when we note on page 47 of the report 200 kc. bands are allowed for aviation services as low as 118-132 mc. The aviation service in our opinion is not subject to any operating conditions more severe than the railroads insofar as frequency stability is concerned.

As pointed out in our testimony at the hearings, Dockets 6593 and 6651, we do not believe that it is practicable at the present state of the art to work within such a narrow channel at frequencies of 156 to 162 megacycles. Panel 13, Steering Committee, at the time of the hearing, Docket 6651, recommended allocations on the basis of 60-kc. channel widths. At the meeting of Committee 7 in Chicago on December 12 and 13, 1944, we again considered the channel width problem and in discussing the matter with Professor Noble, chairman of Panel 13, were advised that 100 kc. instead of 60 kc. were presently recommended by the Steering Committee for frequencies above 132 mc. and that the R. M. A. Emergency Service Equipment Committee favored 120 kc. Obviously, if the majority of the Steering Committee of Panel 13 who had previously recommended 60 kc. could change its views so quickly something was radically wrong with its first views.

60-Kc. Width Impracticable

In order to determine if the manufacturers could presently supply us with equipment that would operate on 60-kc. channel width we wired the R. C. A., General Electric, Westinghouse Electric & Mfg. Co. and Bendix Radio, as follows: "Radio service being established for railroads between 156 and 162 megacycles with 60 kc. band width. Please wire me promptly at Indianapolis if your company is in a position to presently furnish radio equipment that will operate on 60-kc. band width under railroad conditions." Their replies are attached, and you will note they are unanimous in their view that 60-kc. channel width is presently impracticable.

We also do not believe it will be practicable to work adjacent channels even at 100 kc., which view is confirmed by both Bendix and General Electric in their replies mentioned above.

In effect, therefore, the 33 channels allocated with 60-kc. channel width or a total of 1,980-kc. band will provide 19.8 channels of 100 kc. and, assigning them alternately, afford only 10 clear channels. If actual experience indicates that additional space is required we will rely on the Commission's assigning us such space in the unassigned portions of the 156- to 162-mc. band and in the 102- to 108-mc. band as mentioned in the report.

2.—Considering now the channels assigned for yard and terminal operation, while we do not note that channel widths in these services are mentioned, we assume the Commission had in mind 60 kc. for the 192-216 mc. band and in such event the previous statements in connection with the end-to-end service will apply insofar as channels widths are concerned. For the bands 44-50 mc. we assume 40-kc. channels will be allocated and for 54-78 mc., 50-kc. channels.

Television Bands

As far as we know, no one at present is in a position to say whether it will be practicable to operate in interspersed television bands. At the meeting of Panel 2 in Washington, D. C., November 1, 1944, it was observed that none of the experts present committed himself to an outright statement that such a plan was feasible. Attention is called to a statement of Professor D. E. Noble, chairman, Panel 13, to the Commission on the report of Panel 2, wherein he states: "I am extremely pessimistic about the success of the proposed share-the-channels Television-Mobile Communications plan."

Also, we call attention to a memorandum prepared by David B. Smith, chairman, Panel 6, Television, R. T. P. B., dated October 30, 1944, on the Joint Use of Channels by Television and Communication Services. In this memorandum, under the title, "Adjacent Channel Interference," Mr. Smith states: "Again neglecting tropospheric effects, adjacent channel television stations can be reassigned at about 85 miles with the limitation that between the 5.0 mv/m and the 0.5 mv/m contour, the television user will probably receive only one of the two stations. The communication service can operate on the adjacent television channel but only in the vicinity of the television station, otherwise the communication service will interfere with television service. The size of this communication area will depend upon the relative power of the television service and not of the communication service. The higher the ratio of television power to communication power, the further the communication power can be from the television station. In any case it appears that the communication area will be local in area and its transmitter cannot be very far from the television transmitter."

Note particularly that it is Mr. Smith's opinion that the interspersed communication can operate on an adjacent television channel only in the vicinity of the television station; otherwise, it will interfere with the television service and by the same criterion we can well imagine the interference that will result to the communication service from the television station.

Again, at a joint meeting of Panel 2 and Panel 13 in New York on December 20, 1944, it was observed that serious

doubt existed in the minds of many present as to the practicability of the proposed sharing and a subcommittee of Panel 2 submitted the following report:

"1. The subcommittee of Panel 2 is unable to develop a plan of shared channel operation between communication services and television broadcasting services. This is not to say that such a plan might not be accomplished, but more data and experience will be required than are now available. One difficulty has been the lack of jurisdiction of the Committee to make any determination of channel allotments to the several services on the basis of public interest, convenience and necessity.

"2. Therefore, the subcommittee recommends that allocations be made to the services on the basis of exclusive assignments as between television and communication services. This is not to exclude geographical channel sharing between the several classes of communication service."

Taking the above into account we are very much concerned as to the practicability of the proposed allocation by the Commission, especially since about two-thirds of the total frequencies allocated to us are on an interspersed basis. We recommend, therefore, that the Commission allocate cleared channels for these services in the unassigned portions of the 156- to 162-mc. band and in the 102- to 108-mc. band, as mentioned in the report.

3.—No mention was made in the Commission's report of our desire to use end-to-end, yard, terminal and point-to-train frequencies interchangeably as brought out in our Report M-1940 and in our Report M-2019 to which was attached M-2020-2.

A number of railroads, due to pooling of power and for flexibility in operation, desire to use the frequencies assigned them interchangeably and since any interference that would result will be internal to the railroad concerned we assume the Commission would have no objection and we would recommend that the usage be confirmed by formal action.

4.—We also note that no mention was made in the Commission's report of our desire to use such frequencies as may be assigned for end-to-end, yard and terminal operation, in harbor craft service or tug boat dispatching, as stated in our Preliminary Report No. 4, M-2019. It is assumed that the Commission will have no objection to the railroads utilizing these frequencies for this purpose and we would recommend that the usage be confirmed by formal action.

The report is signed by William J. Milroy, counsel, Association of American Railroads and John L. Niesse, chairman, Committee 7, Panel 13, R. T. P. B., and representing the Association of American Railroads.

Oral Testimony

Oral testimony was presented by John L. Niesse as follows:

"Although the railroads are pleased with the number of channels proposed for them, there are two important factors which we feel will very seriously reduce the number of these channels to a much smaller amount than stated in the report.

"The first of these important points is the narrow channel width assumed. In its report, the Commission recognized the need for and allocated to us 33 channels for end-to-end and point-to-train service, but the allocations have been proposed on an assumption of a 60-kc. channel width. As we previously advised the Commission, we do not believe it is practicable in the present state of the art to operate on such a narrow channel width at frequencies of 156 to 162 mc. In order to definitely determine the practicability of obtaining equipment that would operate on a 60-kc. channel width under railroad conditions, we asked the R. C. A., General Electric, Westinghouse Electric & Mfg. Co. and Bendix Radio if they could supply such equipment. They were unanimous in their view that it would be impracticable. Therefore we believe, as do the manufacturers, that the minimum channel width should be 100 kc.

"We appreciate the fact that it is possible under certain ideal conditions to build a set that will operate on a 60-kc. channel width but we do not believe it practicable to do so in a mobile set for use in railroad service.

"In requesting 100-kc. channel widths, we feel that we are not unreasonable when it is observed that the Commission has allocated 200-kc. channel widths to the aviation service for frequencies as low as 118 to 132 mc. The aviation service in our opinion is not subject to operating conditions that are more severe than those encountered on the railroads insofar as frequency stability factors are concerned.

Further Recommendation

"I should also like to point out that testing in the 156-to-162-mc. band has been with amplitude modulated equipment. We have not as yet been able to determine whether eventually AM or FM operation will be the more advantageous. Should it finally be determined that FM operation presents outstanding benefits, then we would require a channel width of 150 kc. instead of 100 kc.

"Even at a 100-kc. channel width it will not be possible to operate on adjacent channels in the same area. This view is confirmed by both General Electric and Bendix Radio. The matter of operating on adjacent channels can be best illustrated by reference to the Chicago terminal area upon which the 33 channels are based. The commission has proposed 33 channels, 60-kc. wide, but it assumes that adjacent channels will not be used in the same area. On this basis, therefore, we will have only 16 channels. If these 16 channels are only 60-kc. wide and our equipment requires 100 kc., the result will be that the number of channels will be reduced to about 10 interference-free channels.

"So that our use of radio may not be restricted, we recommend that the Commission assign us sufficient space, preferably in the unassigned portions of the 156-162-megacycle band or in the 102-108-megacycle band, to provide a total of 33 channels 100-kc. wide for end-to-end and point-to-train service. Only by so doing will the railroads have available the number of channels recognized by the Commission as necessary.

"The other point I wish to stress is that all the frequencies proposed for yard and terminal service are to be shared with television. We are very much concerned about this sharing plan. As far as we know there is no test data available to indicate that such an arrangement is feasible, nor do we know of any experts who will say definitely that such an arrangement will work. In fact, David B. Smith, chairman, Panel 6, Television, has said in a memorandum on this subject that the communication area of a railroad set operating under this shared plan will be local and the railroad transmitter cannot be very far from the television transmitters.

For Flexible Operation

"Again, at a joint meeting of Panel 2 and Panel 13, a subcommittee of Panel 2 recommended that allocations be made to the services of the two panels on the basis of exclusive assignments as between television and communication services. In our brief we recommended interference-free channels for yard and terminal service and while we would very much like to see interference-free channels made available for yard and terminal operation, particularly for the number of railroads who have indicated they will use radio if frequencies are allocated, we fully appreciate the large demand for frequencies in this particular portion of the spectrum. Consequently, we intend to go ahead on the shared plan proposed by the Commission. If interference develops we will rely on the Commission to make available to us an adequate number of channels as found by the Commission in its report to be reasonably required.

"One final point: for flexibility in train operation, we desire to use the frequencies assigned for end-to-end, point-to-train, yard and terminal, interchangeably, and also to use these frequencies for tug boat dispatching. Since any possible interference that might result would be internal to the individual railroad concerned, we presume that Commission will have no objection to this. However, since the question has been raised by a number of railroads, we recommend that this interchangeable usage be confirmed in the Commission's final report."

* * *

AIR EXPRESS AT LA GUARDIA FIELD.—The Air Express division of Railway Express Agency reports a "history-making total of 699,357 air express shipments" handled at La Guardia Field, New York, in 1944. This was an increase of 25.9 per cent over the previous all-time high reached the year before.

Railroads-in-War News

January Net Income Was $40,000,000

Net railway operating income for that month was $73,016,058

Class I railroads in January had an estimated net income, after interest and rentals, of $40,000,000 as compared with $45,324,012 in January, 1944, according to the Bureau of Railway Economics of the Association of American Railroads. The month's net railway operating income, before interest and rentals, was $73,016,058, compared with the $84,997,969 reported for January, 1944.

The A. A. R. pointed out that January is the 20th consecutive month in which the net earnings of the carriers has shown a decline, as compared with the corresponding month of the previous year.

For the 12 months ended January 31, the rate of return on property investment averaged 4.06 per cent, compared with a rate of return of 5.03 per cent for the 12 months ended January 31, 1944.

Total operating revenues in January amounted to $751,336,771 compared with $740,671,731 in the same month of 1944, an increase of 1.4 per cent. Operating expenses amounted to $550,232,185 compared with $504,013,073, an increase of 5.2 per cent.

27 Roads in Red—Class I roads in January paid $133,707,229 in taxes, a decrease of $3,088,182 or 2.3 per cent. Twenty-seven Class I roads failed to earn interest and rentals in January, of which 16 were in the Eastern district, one in the Southern region, and 10 in the Western district.

Class I roads in the Eastern district in January had an estimated net income of $8,000,000 compared with $17,202,028 in the same month of 1944. Their net railway operating income was $23,180,721 compared with $34,819,973.

Gross in the Eastern district in January totaled $313,703,172, a decrease of 3.5 per cent compared with the same period of 1944, while operating expenses totaled $245,188,177, an increase of 3.6 per cent.

Class I roads in the Southern region in January had an estimated net income of $10,000,000 compared with $9,890,725 in the same period of 1944. Their net railway operating income was $13,924,312 compared with $14,411,721.

Operating revenues in the Southern region in January totaled $113,269,393, an increase of 3.8 per cent compared with the same period of 1944, while operating expenses totaled $72,219,941, an increase of 6.9 per cent.

Western Roads Fare Better—Class I roads in the Western district in January had an estimated net income of $22,000,000 compared with $18,231,259 in the same period of 1944. Their net railway operating income was $35,911,025 compared with $35,766,276.

The January gross in the Western district totaled $324,364,206, an increase of 5.8 per cent compared with the same period of 1944, while operating expenses totaled $212,824,067, an increase of 6.5 per cent.

CLASS I RAILROADS—UNITED STATES

	Month of January 1945	1944
Total operating revenues	$751,336,771	$740,671,731
Total operating expenses	550,232,185	504,013,073
Operating ratio—per cent	70.57	68.05
Taxes	133,707,229	136,795,411
Net railway operating income (before charges)	73,016,058	84,997,969
Net income, after charges (estimated)	40,000,000	45,324,012

Frisco Publishes Booklet To Help War-Made Blind

To help make life a little easier for the war-made blind who return to the United States robbed of their sight by war injuries, the St. Louis-San Francisco has recently published a booklet etitled "How to Serve Those Who Cannot See," which is being issued to all dining car stewards and waiters on the Frisco lines as rapidly as possible. O. T. Hall, dining car superintendent of the Frisco, has asked employees who come in contact with the public on trains to read the booklet to better aid traveling members of the armed forces who have been deprived of their sight, at the same time explaining that it has been written and published in collaboration with the "Seeing Eye" organization at Morristown, N. J.

"As our Armed Forces return from overseas," the booklet states, "some of them will be without sight. While your contact with them should be of sympathetic understanding, you are to encourage them in every way possible to lead normal, active lives in spite of their handicap and not to create the impression that you 'feel sorry' for them."

The booklet shows how food should be placed before the blind. It explains how the waiter should address one who cannot see; how to help him select food. The booklet also describes the function of the "Seeing Eye" dog and how the dog should be handled in a dining car.

More War Casualty Traffic

More than five times as many Pullman cars were used in the United States for the movement of military casualties in January, 1945, as in June, 1944, according to the Office of Defense Transportation. There were 1,546 Pullmans allocated for hospital cases in January, as compared with 293 last June.

Reefers Haul Fillets to Allied Foxholes

Transportation Corps carries 50,000 tons of perishables to front each month

With 200 refrigerator cars now in operation in Europe, 300 more to be built, and between 500 and 600 captured from the Nazis, it is probable that the Transportation Corps, now hauling 50,000 tons of meats, fresh vegetables and dairy products a month, will continue its job of "bringing fillets to the foxholes," and thus uphold the claim of Headquarters, European Theater of Operations, that the American soldier is "the best fed soldier in the world."

Prior to the American break-through at St. Lo, all perishables had been handled by refrigerated trucks and trailers, but with the ever-expanding front lines, and the rehabilitation of railways it was possible to put into service the reefers which had been built in England from American pre-fabricated sections. Although smaller than refrigerator cars in service in this country, these reefers can haul over 35 tons of perishables. Bunkers for holding ice are built in at each end of the car, which has an ice capacity of three tons. Thus far, the Transportation Corps reports only wet ice has been used, and six plants in France and Belgium insure an adequate ice supply. It is estimated a freshly iced reefer will remain cold for 12 days and, according to T. C. not a single carload of food has been lost in spoilage, despite a few mishaps in the early days of their operation. It is recalled a car once was lost for nine days, because

At one of the French ports Pvt. Robert Kreisher and S/Sgt. Paul V. Rogsdale, of Reading, Pa., direct French civilians in loading of fresh meat into a reefer

of continuous shifting about, but that when found its contents were in first-class shape.

Except for their ice capacity, which ranges between one and two tons, the captured reefers are substantially the same as ours.

Basis of Train Curtailment Is Changed by O. D. T.

The Office of Defense Transportation has modified its General Order 47 through Amendment No. 1 thereto, effective February 27. The change is in the basis for determining whether or not passenger trains shall continue to operate under that provision of the order requiring suspension of such trains, effective March 1, where the occupancy of seats and space fails to average 35 per cent of capacity. In cases where the carrier has no records to indicate the occupancy of a particular train during November, 1944, the base period specified in the original order, it may, under the amendment, use as a base period for that purpose either December, 1944, or January or February, 1945.

Car Service Orders

Substitution of ventilated box cars for refrigerator cars for the movement of citrus fruit from points in Southeastern territory to destinations on or south of a line drawn from New York through Philadelphia, Pa., Pittsburgh, Columbus, Ohio, Indianapolis, Ind., and St. Louis, Mo., has been authorized, effective March 2, by the Car Service Division of the Association of American Railroads. This action was taken because abnormal demands for refrigerator cars exceed the supply, it was indicated.

In connection with this action, roads north of the Potomac and Ohio rivers, and west of the Mississippi, were required to forward promptly to owning roads ventilated box cars of Atlantic Coast Line, Seaboard Air Line, Southern, Central of Georgia, Louisville & Nashville or Charleston & Western Carolina ownership, and not to use such cars for any loading. Roads in Southeastern territory are required to restrict the loading of such cars to perishable freight. Rules in effect in previous years for the distribution of claims for frost damage on citrus fruit handled in ventilated box cars have been reinstated.

Interstate Commerce Commission Service Order No. 287, requiring War Food Administration permits for the shipment of hay from certain sections, which was to have expired March 10, was vacated as of March 7 by No. 287-A.

The "tight" refrigerator car situation was further reflected in a W. F. A. program intended to promote the use of boats in transporting Irish potatoes from Maine to points on the Atlantic coast. Shipments by rail are subject to W. F. A. permits. Permits will also be required for shipment by water, but arrangements have been made for the Commodity Credit Corporation to absorb the difference between rail and higher water rates so that more potatoes can be moved out of primary storage points.

Convention Committee Secretary Now Frank Perrin

Appointment of Frank Perrin, assistant general counsel of the Office of Defense Transportation, as secretary of the War Committee on Conventions to succeed Richard H. Clare has been announced by Col. J. Monroe Johnson, chairman of the committee and director of O. D. T. Mr. Clare, who was on leave from his position as assistant general passenger agent of the Pennsylvania at Philadelphia, Pa., returns to that work.

The committee has announced that up to March 1 it had received 1,331 applications for permission to hold group meetings, such as conventions and trade shows, to be attended by more than 50 persons who would require hotel accommodations and travel facilities. Of these, 53 were granted and 1,278 were denied. Nearly all of those approved were for church legislative conferences. Others which met the committee's test—that is, that the war effort would be hindered by failure to hold the meeting—were certain technical and training conferences and labor union wage agreement conventions.

On March 3 the committee pointed out that livestock auction sales may be held without permit if all animals are shown for the purpose of actual sale, but permits are required for meetings held in connection with such sales, for exhibitions or display of equipment and accessories at sales, and for livestock exhibits for show purposes or the awarding of prizes.

L. C. L. Embargo in 31 States

Because the free movement of box cars has been interfered with by an undue accumulation at large terminals and transfer points in the eastern and middlewestern states of such cars loaded with l.c.l. freight, the Car Service Division of the Association of American Railroads this week issued its embargo No. 93, prohibiting for a five-day period acceptance or loading at any station in the United States of less carload freight

* * *

Executive Personnel of the 714th Railway Battalion, Operating in Alaska

Most of these officers are former railroaders. They operate the Alaska Railroad which, since February, 1943, coincident with the Jap threat, has been in U. S. Army hands. Here shown are: *Back Row, left to right:* 1st Lt. Ian M. West (formerly yd. cond., River Terminal Ry., Cleveland); 1st Lt. Earle M. Enger (supvr. brdg. & bldg., C. St. P. M. & O.), Capt. Samuel B. Smith (asst. aud., asst. sec'y. gen'l frt. & passgr. agt., Weatherford, Mineral Wells & Northwestern); 1st Lt. Joseph J. Burgess, (car rep. for., C. St. P. M. & O.); Capt. Robert E. Homiston; C. W. O. August S. Niewenhous (registr. clrk., Queensboro Bridge Ry. Co.); Capt. Gordon B. Mills (dispr., C. St. P. M. & O.); 1st Lt. Walter W. Dorwart (trainm., P. R. R.); W. O. J. G. John W. McManamy (clrk. & off. supvr., mechanical dept., P. R. R.); *Center Row, left to right:* 1st Lt. Raymond L. Steinke (ch. clk. to asst. div. supt., C. St. P. M. & O.); 1st Lt. Homer H. Stalnaker (asst. engr. Dept. of Agriculture); 1st Lt. John L. Banks (rd. mstr., G. N.); 1st Lt. Meville D. Ray (signalman, St. L.-S. F.); 1st Lt. Ralph C. Hilton (asst. to engr. m. of w., Gulf Coast Lines); 1st Lt. Donald M. Severtson; 2nd Lt. John H. Gardiner (asst. engr., m. of w. dept., P. R. R.); 1st Lt. James McComb (mech. draftsm., C. M. St. P. & P.); *Front Row, left to right:* Capt. Lloyd V. Lee (ch. clk. to gen. pur. agt., C. St. P. M. & O.); Capt. Charles H. Tillquist (loco. engr., C. St. P. M. & O.); Capt. Augustine J. Annunziato; Maj. Walter F. Hastedt (engr. acct., C. St. P. M. & O.); Lt. Col. Herbert S. Huron (gen'l yd. mstr., C. St. P. M. & O.); Capt. Philip E. Barlow (asst. engr., C. St. P. M. & O.); Capt. Jack A. Robbins; and Capt. David M. Switzer

Carl Gray Now Director General, 1st and 2nd M. R. S.

Brig Gen. Carl R. Gray, Jr., director of the 1st M. R. S., and holder of the Legion of Merit for his services in North Africa, the Distinguished Service Medal for his part in the Italian campaign, the Order of the Crown of Italy for his rehabilitation of the Italian railways, and more lately the Bronze Star for his part in the campaign in southern France, has been appointed to the newly-created post of Director General, Military Railway Service, in charge of the 1st and 2nd M. R. S. in continental Europe.

Under General Gray, the 1st M. R. S. units have seen service in eight countries in the Mediterranean area, having landed with shock troops at Casablanca, Morocco, and thereafter having moved across North Africa, through Algeria and finally to Bizerte, Tunisia, from which they took off for Sicily, Italy, Corsica and Sardinia.

When, in October of last year, General Gray's men moved into southern France to supply the Sixth Army Group, they became officially known as the 1st M. R. S., to distinguish them from the 2nd M. R. S., under Brig. Gen. Clarence L. Burpee, stationed in the north of France.

While still in Sicily, the army railroaders under General Gray received a special commendation from Lt. Gen. George S. Patton, Jr., for their support of the 7th Army, and in Italy, they were awarded the 5th Army plaque and clasp by Lt. Gen. Mark Clark. General Gray was responsible for the first coal to be moved into Rome following the city's liberation, and himself piloted the first train into the freed city.

As readers of *Railway Age* all know, General Gray was executive vice-president of the Chicago, St. Paul, Minneapolis & Omaha before entering active military service.

when consigned to or intended for movement within or through the area east of the western boundaries of Minnesota, Iowa, Missouri, Arkansas and Louisiana.

The embargo went into effect March 7 to run through March 11. It applied to all freight handled by freight forwarders and to all trap cars loaded by industry. The only l.c.l. shipments excepted from its provisions were those moving on government bills of lading and drugs and medicines. The continued forwarding of l.c.l. freight in transit at the time the order became effective, and the loading at transfers of shipments accepted and billed prior to that time, were permitted, however.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since February 23, and which are of interest to railways:

Cast Iron Pipe—Members of the Cast Iron Soil Pipe and Fittings Industry Advisory Committee met with W. P. B. officials recently to discuss the possibility of increasing production of cast iron soil pipe and fittings to meet current and future demands. Production has declined from approximately 565,000 tons in 1941 to 165,000 tons in 1944. As a result, wholesalers and manufacturers have been using their inventories, which have been reduced to mere odds and ends, and the supply situation is seriously short.

Reports showed a backlog of orders of 95,000 tons of soil pipe and fittings as of December 31, 1944. This backlog is continuing to grow at the rate of 10,000 tons a month and at the present rate of production it would take foundries about eight months to fill these orders. A conservative estimate of over-all 1945 requirements approximates 225,000 tons.

Cast Iron Scrap—Inventories of cast iron scrap in the hands of consumers have been limited to a 60-day supply of purchased cast iron scrap based on his current melt schedules to insure an equitable distribution of available supplies. A critical shortage has developed in the supply of cast iron scrap for foundry use, W. P. B. said, and W. P. B.'s Steel Division is constantly receiving requests from foundries in all parts of the country for the allocation of cast iron scrap.

Furthermore, W. P. B. officials said, an examination of inventory reports revealed that many foundries and steel mills were carrying excessive supplies of cast iron scrap and are still purchasing quantities of it in the open market.

Noble Fir—To meet increased requirements for aircraft grade lumber, control over the production of Noble fir lumber of aircraft grades has been reestablished by Order M-386, effective March 1.

Plywood—Requirements for softwood plywood are greater than supply and no decrease in military demand is expected. Facilities for increasing production are available, but they cannot be utilized fully because of log shortages. Log production is being curtailed by lack of truck tires and shortage of fallers and buckers. However, 1945 production of softwood plywood can probably be maintained at the 1944 level of about 125,000,000 sq. ft. per month unless the tire situation becomes more acute, they said.

Distributors' stocks have decreased from 83,000,000 sq. ft. in January, 1944, to 29,952,000 sq. ft. as of January, 1945, W. P. B. officials said. Hardwood plywood is being used for aircraft programs because sufficient quantities of softwood plywood cannot be obtained.

PR-25 Amended—Priorities Regulation No. 25, governing operations of the spot authorization procedure, has been amended to make its application more flexible by permitting authorization of civilian production that is not prohibited or limited by an L (limitation) or M (conservation) order of the W. P. B. Under the new rules, it will be possible for W. P. B. to grant a spot authorization for production of items in cases where applications for permission to produce the civilian goods in question were filed under the C. M. P. or some other W. P. B. procedure. In these cases, the applicant would receive a deferred allotment if he gets any authorization to purchase materials.

Under the original spot authorization rules, only those products that were subject to L or M order limitations were eligible for spot authorizations. Under the amendment, it will be possible for W. P. B. to grant spot production authorizations for a larger number of civilian type items.

The amendment also permits appeals under orders that are subject to the spot procedure. Formerly, appeals for permission to make products, the manufacture of which was prohibited or limited by an L or M order, were not permissible if a spot authorization for their production could be obtained. However, in actual practice, it has been found that this rule was not equitable in all cases and it was decided to change it through this amendment.

Relaying Rails—Sales and transfers of used steel rails have been placed under further restrictions by an amendment to L-88. Sales of used rail of relayer grades must hereafter bear a certification that they are to be used for relaying track. The amendment does not establish any control over relaying rail when reused as such on the owner's lines, W. P. B. emphasized.

Surplus Property—The Surplus Property Board has announced that a pamphlet containing Sections III, IV, and V of the Handbook of Standards for Describing Surplus Property is now available from the Superintendent of Documents at 15 cents a copy. These sections cover: Section III, Textile, Leather, and Fiber, Crude, Basic and Finished Products; Section IV, Chemicals, Drugs, Medicines, Oils, Fats, Waxes, Cosmetics, and Household Chemical Preparations; Section V, Glass, Clay, Stone, and other Non-Metallic Mineral, Crude, Basic, and Finished Products.

It was emphasized that this publication is not a list of surplus property that is available for sale. The handbook was undertaken by the W. P. B. last year at the request of the Surplus War Property Administration to establish minimum standards to be used by contractors and Government owning agencies in describing inventories. These standards are designed to furnish sufficient information in commercial terms to allow a surplus property disposal agency to arrange for resale without calling upon the owning agencies for additional items of description.

Zinc.—According to an amendment of Order M-11, effective April 1, slab zinc will be placed under allocation controls similar to those in operation from June 1, 1942, to September 15, 1944. Resumption of allocation controls is necessitated by increasing ammunition requirements and other war needs, W. P. B. said.

Consumers may accept deliveries of less than 20 tons per month from dealers without allocation certificates if the consumer has not applied to the W. P. B. for an allocation of zinc for the month during which he accepts a dealer delivery. Preference ratings on purchase orders supported by allocations do not apply.

Prices

Iron and Steel Products—Warehouses and jobbers of iron and steel products were authorized to pass on to their customers the "interim" increases in mill ceiling prices for four basic steel products, which became effective January 11, 1945, and which up to this time they have had to absorb. The authorization became effective March 1, and the higher prices may be billed for deliveries made on or after that date. The four basic products are hot-rolled carbon plates, increased 10 cents; hot-rolled carbon steel sheets, increased 10 cents; galvanized sheets, roofing and siding, increased 15 cents per 100 lb.; and rails, all types, increased $3 per gross ton.

The increases were not applicable in sales of secondary hot-rolled carbon plates or sheets, galvanized sheets, rails or bright nails and staples at either the mill or warehouse level, O. P. A. pointed out.

On January 11, 1945, also, an increase of 25 cents per 100 lb. was authorized in the mill ceiling price of nails and staples, other than galvanized, but under the price increase order, warehouses and jobbers were permitted to pass this increase on to customers immediately.

Screen Cloth—Amendment 4 to RPS-40, effective March 3, limits a jobber's mark-up on new types of builders' hardware or insect screen cloth first offered for sale by him after March 3, 1945, to 33⅓ per cent applied to the manufacturer's maximum price of the product—plus actual transportation charges paid by the jobber for delivery.

GENERAL NEWS

Control of C. & O. Held Law Violation

Proposed report would break up Alleghany Corporation's railroad grouping

Control of the Chesapeake & Ohio, and through it of the Nickel Plate and Pere Marquette, by Alleghany Corporation, Allan P. Kirby and Robert R. Young, was acquired and is maintained in violation of the Interstate Commerce Act, and the Interstate Commerce Commission should require these individuals and corporations to take steps necessary to "prevent a continuance of the violation," according to C. E. Boles, assistant director of the commission's Bureau of Finance, whose findings and recommendations are set forth in his proposed report in the related No. 29085 and Finance Docket No. 14692 proceedings.

Time of Control the Issue—The No. 29085 investigation was undertaken by the commission on its own motion for the purpose of determining whether control of the C. & O. roads was acquired "after the enactment, and in violation, of paragraph (4) of section 5 of the Interstate Commerce Act," as was reported in *Railway Age* of February 12, 1944, page 363. Paragraph (4), was enacted into law as part of the Transportation Act of 1940, in effect requires that acquisition of any form of control or management of two or more carriers by any person, corporation, or common interest, if accomplished after September 18, 1940, must be approved by the commission.

The C. & O., subsequently, on September 2, 1944, filed an application with the commission, listed as F. D. No. 14692, in which it sought authority to acquire the property of a wholly-owned subsidiary company, the Norfolk Terminal & Transportation Company, and Alleghany joined in this application with a request for commission approval of acquisition of control of the terminal company by it, through its control of C. & O., thereby opening the way for a commission ruling on the propriety of the relationship between Alleghany and the C. & O. At that time hearings in No. 29085 had been completed (reported in *Railway Age* of August 5, 1944, page 245, and previously), so the issues were further reviewed in a hearing in the finance application, as noted in *Railway Age* of November 11, page 737.

Was Continuity Broken?—It having been established that Alleghany, directly and through subsidiaries, had acquired control of the C. & O., Nickel Plate and Pere Marquette, and of United States Trucking Corporation, a motor carrier, prior to June 16, 1933, and that Alleghany now maintains such control, while Mr. Young and Mr. Kirby maintain control of Alleghany which they acquired in 1937, the basic question at issue, according to the report, was whether Alleghany had continuously maintained its control, or, if its control was interrupted, whether it was regained prior to September 18, 1940.

Prior to 1933, Mr. Boles points out, Alleghany's control of the rail lines was indirect, being exercised through its control of a holding company, the Chesapeake Corporation. Alleghany then had legal control, as distinguished from working control, of Chesapeake Corporation, and the corporation in turn had legal control of the C. & O., through actual ownership of a majority of the voting stock. In 1929, however, substantially all of Alleghany's assets, including its Chesapeake Corporation and other stocks, had been pledged as collateral security in connection with three Alleghany bond issues for which the Guaranty Trust Company of New York was trustee. In the event the appraised value of the pledged collateral fell under 150 per cent of the principal amount of the Alleghany bonds outstanding, Alleghany lost, and Guaranty acquired, the voting rights attached to the pledged stock.

Proxy and Court Fights—Early in 1938 a dispute between Guaranty and Alleghany as to the value of the collateral resulted in litigation, in the course of which the two parties became involved in a proxy fight for control of the C. & O. stockholders' meeting, the result of which was the selection of certain C. & O. directors supported by Guaranty and opposed by Alleghany. Court decisions in favor of Guaranty established Alleghany's loss of control of Chesapeake Corporation, which was subsequently dissolved without that control ever being regained, according to the report. By that time, however, Chesapeake Corporation's holdings of C. & O. stock had been reduced to a point where it no longer had legal control of the road, though it was exercising working control through its "entrenched position" on the C. & O. board of directors. Through dissolution of Chesapeake Corporation, Alleghany's interest in the C. & O. "was converted from an indirect to a direct interest," Mr. Boles observes.

Loss of control of Chesapeake Corporation meant loss of control of the C. & O. board, in effect, the report points out, and Mr. Young is quoted as referring to himself in correspondence as the "sole representative" of Alleghany on the board's finance and executive committees when it was decided in 1939 not to reappoint him to either. Prior to the election of C. & O.

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Use of Aluminum a Matter of Economics

Advantages for passenger and freight cars weighed against cost

The extent to which aluminum and magnesium are used, after the war, in the fabrication of transportation equipment, as against ferrous metals, will be determined largely by the relative price positions of the two groups of metals and the development of the art of structural design as it involves the use of alloys of each, according to Brigadier General Charles D. Young, deputy director of the Office of Defense Transportation, in a statement March 7 to the special Senate small business committee, the so-called Murray committee, in the course of its investigation into the future of the light metals.

Must Reduce Price—This viewpoint was further developed in a statement the same day to the same committee by V. R. Hawthorne, executive vice-chairman of the Mechanical Division of the Association of American Railroads. "Before railroads can generally justify recommending that large numbers of freight cars be constructed of aluminum alloys," said Mr. Hawthorne, "it seems necessary that the price of this material be reduced. It is to be hoped that the producers of the high-priced light metals will find means to materially reduce the price of their product. If this is accomplished, there can be no doubt that the railroads will use these light metals in the construction of new equipment and the rebuilding and heavy repairing of existing equipment where practicable."

While General Young discussed to some extent the possibilities of using light metals in highway and water transport, he pointed out that the greatest opportunity for a large increase in their use in transportation is on the railroads, particularly in the construction of freight cars. The non-ferrous metals have definite advantages for coal-carrying equipment, he remarked, because of their resistance to corrosion. It is a definite possibility, he said, that some such number as 5,000 cars per year might be built of the light metals, "even though the present prices of low carbon steel, high tensile low-alloy steel and aluminum change little. Were the price differences to decrease, it would undoubtedly result in an increase in the use by the railroads of additional quantities of light-weight alloys in equipment construction," he observed.

In addition to their ability to resist corrosion, the light metals have an advantage, for hopper car construction particularly, in

(*Continued on page 467*)

Fixes Proportionals on Ex-Barge Grain

I.C.C. sets scale based on local rates, but higher than ex-lake basis

The Interstate Commerce Commission has found, after further hearing in its I. & S. No. 4718 proceeding, that rail proportional rates on ex-barge grain from Chicago to eastern destinations should be differentially lower than the local rail rate on grain according to a prescribed scale, but not so low as ex-lake or ex-rail proportionals. The majority report was by Commissioner Splawn, with Commissioner Mahaffie concurring in the results and Commissioners Miller, Alldredge, Lee and Patterson dissenting.

Case Went to Supreme Court—Railroads participating in the traffic involved had proposed to have local grain rates from Chicago apply on ex-barge grain, limiting the application of existing proportionals to grain arriving at Chicago by rail or lake vessel, and the commission had held the proposed tariffs just and reasonable. However, after the Supreme Court had upheld the commission's finding (reported in *Railway Age* of June 19, 1943, page 1235) parties objecting to the railroads' action took advantage of a suggestion contained in the commission's report to the effect that, while it would not uphold the ex-lake proportionals as applied to ex-barge shipments, it might be disposed to prescribe proportionals or joint rates lower than the local rates which the order upheld, provided proper action was taken to obtain such finding. Pending the outcome of the commission's further consideration of the question, application of the local rates was voluntarily postponed by the carriers.

The prescribed differential applying to ex-barge grain, under the report on further hearing, ranges from one cent, where the local grain rate is 13 or 14 cents, up to 5.5 cents where the local rate is 28.5 cents or more. To Trunk Line and New England territories ex-rail and ex-lake proportionals are uniformly 8.5 cents under local rates, the report indicates, but to Central Territory the ex-rail proportionals "being adjusted to equalize the various markets and routes, do not bear any consistent relation to the local rates." Examiner Fuller, in a proposed report reviewed in *Railway Age* of September 2, 1944, page 380, had recommended ex-barge proportionals averaging 1.5 cents below the local rates to Central Territory, and 5.5 cents below local rates to Trunk Line and New England territories.

Barges Didn't Have "Fair Break"—To apply the full local rates to ex-barge grain, the report said, would result in barge-rail combinations higher in some instances than the all-rail rates from the same origins. The record shows, it went on, that local rates would "lessen and possibly destroy the barge-rail traffic to Trunk Line and New England territories and also largely to Central territory." "Whether they would restore the traffic to the all-rail routes is problematical. They might have the effect of diverting the grain from these northern Illinois origins to barge movements to the South. In any event, under the proposed schedules, the barge-rail traffic via Chicago would not have a fair opportunity to move in competition with the all-rail and lake-rail traffic."

On the other hand, it continued, where "circumstances and conditions" affecting barge-rail transportation differ from those surrounding ex-rail or ex-lake transportation, the ex-barge proportionals may properly vary accordingly. Among such conditions, it indicated that more service was usually required to handle ex-barge grain.

In prescribing differentials to apply to ex-barge grain, however, the majority found that such ex-barge proportionals should not be made subject to the fourth section rule. This phase of the report was challenged by Commissioner Patterson in his dissenting opinion, where he argued that, since the differential would result at times in a rate from a particular point being lower than from a directly intermediate point, where only the local rate would apply, the carriers either would be compelled to reduce the local rates, whose reasonableness was not in question, or would have to maintain rates resulting in fourth section departures where they have not sought and do not want such relief. "The majority report," he said, prevents the railroads, "against their will, from eliminating fourth section departures, in contravention of the law."

Sees "Error" in Decision—Commissioner Alldredge's dissent, in which Commissioner Lee concurred, ran to what he termed "an error of a fundamental nature" in the majority report. If any railroads are actually suffering from barge competition, it is the western and not the eastern roads, he contended, yet "the majority has decided to increase the rates and revenues of the rail lines extending east from Chicago, even as far as New England —a wholly different set of carriers from those which feel the effects of the waterway competition. . . . The only real solution of the problem, if any solution is called for, is to establish minimum rates for the boats and barges operating on the Illinois Waterway so as to protect the western rail lines against the competition thus created." The western roads had not made a case for such a finding, he added.

Commissioner Miller, on the other hand, took the position that the commission should not prescribe proportional rates on ex-barge grain. He pointed out that the commission did not have jurisdiction over many bulk barge shipments, with the result that barge operators might vary rates so as to offset the effect of the increases approved by the majority, at least for certain shippers. Further, he suggested that the additional expense in connection with handling ex-barge grain should be borne by the barge lines, not by the rail lines, though evidence was lacking as to how this should be determined, and therefore as to how "to do justice between both the barge carriers and the rail lines in the prescription of rail proportional rates for application on this ex-barge grain."

Pension Bill Threatens Opportunities for Jobs

Would take funds that will be needed for improved services, says Gurley

Enactment of the Railway Labor Executives' Association program for liberalizing the Railroad Retirement and Railroad Unemployment Insurance acts would take from the railroads, for "untried social purposes," millions of dollars annually, which will be badly needed by them to restore their equipment, improve service, and increase employment when peace comes, according to Fred G. Gurley, president of the Atchison, Topeka & Santa Fe. Mr. Gurley was one of railroad management's witnesses at this week's sessions of House interstate and foreign commerce committee hearings on H. R. 1362, the bill embodying the R. L. E. A. program which is sponsored by Representative Crosser, Democrat of Ohio.

The National Interest—"The nation cannot afford," Mr. Gurley said, "to forego the benefit of restoration and improvement of railroad plant as a sensible, orderly, productive and businesslike means of meeting problems of post-war unemployment. The work needs to be done. It can be done with private funds if they are not diverted to proposals such as those of this bill.

"It proposes to exact from the railroads as a permanent inescapable charge in the form of annually recurring taxes enormous amounts of money which must be surrendered whether earned or not. The ambition of those who propose this bill is to divert large sums of money to purposes which they characterize as 'social' purposes. In the very nature of things it is a deterrent to restoring railroad properties to the standards which are essential and to making the additions, betterments and improvements which any sensible appraisal of the situation tells us is necessary.

Killing Off Jobs—"This bill ignores these great problems at a time when neither the railroads nor this country can measure them precisely. This bill would dampen the opportunities for jobs. I cannot understand any reasoning which suggests that the railroads be used as a guinea pig. The railroads don't have a record of abundant resources, consistent profits or plentiful opportunities to increase revenues."

Mr. Gurley said "modern thought, both inside and outside the government, demands that railroad debt be decreased and not increased." The Santa Fe, he added, has succeeded in making debt reductions since 1940 which permit a total annual saving in interest of $4,653,000. Had the Crosser bill been in effect in 1944, however, that road's payroll taxes in that year would have increased by $4,767,000 which would have more than wiped out the saving resulting from the reduction in debt.

Mr. Gurley called attention to the fact that Congress, which has made huge appropriations for highway construction and for other transportation agencies, would by enacting the bill "lay an additional burden

upon the railroads and upon the railroads alone." He said that motor carriers owned by the Santa Fe now do not come under the Railroad Retirement Act but come under the less costly Social Security Act as do non-railroad owned motor carriers. The Crosser bill would place railroad owned motor carriers under the Railroad Retirement Act but that act would not apply to other motor carriers.

Weakening the Railroads—"If one is really interested in the future welfare of railroad workers," Mr. Gurley added, "he should be looking for some way to strengthen the railroads, instead of weakening them, in their competition with other forms of transportation. There is no surer way of weakening them than by subjecting them to unproductive increases in their operating costs."

The Santa Fe president also pointed out that under the Railroad Unemployment Insurance Act, which assesses a tax only on the railroads and not employees, the federal treasury has amassed a fund totaling $572,710,000. Of that amount $132,369,000 was collected in 1944 and only $579,000 was spent in that year for unemployment benefits. "The existing fund and the additional sums which are piling up constantly are not needed for the purposes of the Unemployment Insurance Act," he added. "This money, however, presents a great temptation to the proponents of the Crosser bill. They want to get hold of it.

"I am convinced that collections of further taxes for the unemployment insurance fund should be suspended. The suspension of the unemployment insurance tax would allow opportunities for the gainful use of money which is denied by the unnecessary collection of the tax. That is so because as a tax the money is beyond the control of management, but if the money is not drained away needlessly, management can put it to productive use.

Job Tax Suspension Asked—"I urge that you recommend the suspension of collections for the unemployment insurance tax for two years. If those sums are retained by the railroads, it is perfectly obvious that they will be used for a currently good purpose—a productive purpose. And that will mean opportunities for more jobs during this very trying two-year period—the first of the post-war world."

Meanwhile, the first railroad witness, Sidney S. Alderman, general solicitor of the Southern, had completed his comprehensive discussion of management's objections to the bill, which was still under way when the *Railway Age* of March 3 went to press, with its report of the hearings beginning at page 426. At that time Mr. Alderman had come to his consideration of the separate fields of coverage of various acts now applicable to the railroads and their employees.

There he pointed out that railroad employees are now pretty well covered with respect to "occupational needs," i.e., needs arising from conditions within the industry itself. The field of industrial casualties is covered by the Federal Employers' Liability Act; the field of retirement from active employment is covered by the Railroad Retirement Act; and the field of occupational unemployment by the Railroad Unemployment Insurance Act.

Collective Bargaining Abandoned—While on the subject of the Employers' Liability Act, Mr. Alderman recalled that R. L. E. A. maneuvers, which culminated in sponsorship of H.R. 1362, began with consideration of a proposal for enactment of a new Federal Workmen's Compensation Act, in substitution, or in partial substitution, for the Employers' Liability Act. He asserted that this idea has not been abandoned; so the railroads, while facing the immediate threat of the proposals of H.R. 1362, cannot forget the impending threat of such legislation "which would far outrun in extravagance any workmen's compensation law ever enacted in this country."

Mr. Alderman also recalled how the unemployment act resulted from a unilateral proposal of the labor organizations, who went to work on that matter shortly after they had got the carriers to agree to the 1937 retirement act. Likewise, the 1939 and 1940 amendments to the unemployment act were enacted over the opposition of the railroads. The Southern's general solicitor stressed these points because he wanted to make it clear that the 1937 agreement on the retirement act had "no application whatsoever" to the unemployment act.

"The railroads," he went on, "have never agreed not to litigate that act in the courts, and, if what they deem to be arbitrary and unconstitutional new features are to be engrafted upon the unemployment insurance system, the railroads are at perfect liberty to attack that system in the courts, not only as to the new features but even as to the original features."

The unemployment insurance tax of three per cent of taxable payrolls is paid entirely by the railroads, and Mr. Alderman pointed out that the new retirement taxes proposed in H.R. 1362 would make the total levy on the carriers 9¼ per cent of payrolls, while the employees would pay 6¼ per cent or one-half of the retirement tax. He went on to note that these payroll taxes are a first charge on operating expenses, coming ahead of interest and principal of mortgages. "If the railroads cannot pass on to the traveling and shipping public these taxes, they will inevitably become insolvent, because they will not be able to meet their mortgage payments," Mr. Alderman added.

V. D.'s Would Draw Benefits—The "challenging feature" of H.R. 1362, as he saw it, is that "in every one of its major aspects it entirely departs from the field of industrial connection and industrial causes and enters pure fields of social insurance, protection against human needs that do not arise from industrial connections or causes at all, needs that are common to all humanity just because they are human beings and not at all because they are or have been employees of a particular industry."

In this connection, Mr. Alderman listed first the bill's proposal to amend the retirement act to establish a system of survivor annuity benefits. Also, the proposed health-insurance amendment to the unemployment act which would include "every kind" of sickness—pregnancy and maternity, which have "no possible industrial connection," sickness resulting from misconduct, venereal disease, delirium tremens, hypochondria or paranoia. "It would," Mr. Alderman continued, "even cover malingering, against which there could be no possible protection, and to which the absolutely free insurance coverage would be a constant and often irresistible temptation." Thus the Southern general solicitor's characterization of the main changes proposed as "radical" and "extravagant." He had found in "Labor," organ of R. L. E. A., an appraisal of the program as one designed to produce "the most advanced social security law in any nation on earth."

The proposal to add survivor-benefit provisions to the retirement act was discussed at some length by Mr. Alderman, for it is "outstanding" among the proposed retirement-act amendments in the matter of cost. According to Retirement Board Chairman Murray W. Latimer's latest estimates, it would absorb the proceeds of 3.2 per cent of the additional 5 per cent payroll tax which the bill proposes. All of the other retirement-act amendments would be financed by an 0.3 per cent payroll levy, according to Mr. Latimer, who had earmarked 1.5 per cent of his proposed five per cent increase for taking care of the retirement system's present tax deficiency. The latest actuarial valuation of the retirement system found that the tax increase necessary to support existing benefits should amount to an additional three-to-four per cent of payroll.

Latimer Speaks for Himself—Against these findings, as Mr. Alderman put it, the bill's proponents are setting the "assumptions, speculations, actuarial estimates, and judgments of one man"—Mr. Latimer. He emphasized that the committee was not even getting the views of the Retirement Board, for Mr. Latimer stated that he spoke only for himself. Neither did he clear his statement with the Bureau of the Budget nor submit his estimates to the Treasury Department. In the latter connection Mr. Alderman suggested that perhaps "Mr. Latimer thinks that the fiscal branch of the government has no concern with these proposed taxes, because he is proposing in this bill that he and the Retirement Board take over from the Treasury the actual function of tax collection as to retirement taxes. This would be a private, official preserve of his own, with which the Treasury would have no concern."

The Southern's general solicitor then proceeded to look over Mr. Latimer's record as an estimator on the underfinanced retirement system as it is now set up, finding in that record a basis for this statement: "The railroads see no reason why estimates of future costs presented by Mr. Latimer in 1945 should be accepted as law and gospel, when he was so far wrong in 1937 in his original estimates upon which the parties and Congress then relied."

Latimer as an Estimator—Later on, Mr. Alderman suggested it was strange that Mr. Latimer "always shows up" before Congressional committees as "the partisan and advocate of any proposals by the employees for changes in their benefits," when,

as chairman of the Retirement Board, he "is supposed to represent only the public interests and to act as the mediator and arbitrator between the sometimes conflicting interests and views of the other two parties, the railroads and the employees." When Mr. Latimer appears in such a role, Mr. Alderman asserted, "he steps entirely outside his position as chairman of the Retirement Board and representative of the public interest."

Concluding his discussion of the Latimer estimates in their relation to the findings of the actuarial advisory committee, the Southern's general solicitor told the committee that "upon all the evidence the Congress cannot reasonably find that the present deficiency in the [retirement] system is less than three per cent of payroll." Though Mr. Latimer argued the present deficiency down from 3 per cent to 1½ per cent. Mr. Alderman insisted that this was done in "utterly unconvincing ways."

"The railroads," he added, "submit that the case for the bill falls down at its very heart. To ask Congress to gamble that the two official valuations of the system were wrong as to the present deficiency, and that Mr. Latimer is right, is to ask it to take a wholly unwarranted gamble with the fund . . . and to take that gamble on the faith of the judgment and testimony of one man alone—of a man who has been to such an extent the partisan and advocate of the special interests proposing the bill that he was 'not at liberty' to discuss the proposals with the Engineers' and Trainmen's brotherhoods, which represent two-thirds of all the train service employees, and that he never deigned to discuss them with the railroads, which would have to bear half the costs of financing the retirement system."

The fact that the general social security system provides survivor-annuity benefits is no basis for arguing that such benefits should be added to the railroad retirement system's benefits, Mr. Alderman contended. He pointed out that railroad employees insisted upon a separate system, and they got one which is "highly preferential." When the railroads agreed to this, they did not have any idea that thereafter the employees or Congress "would dip back into the Social Security System to pick up any features in that act favorable to beneficiaries, but not contained in the agreed railroad retirement system, and then engraft those features upon the agreed retirement system."

R. R. Employees Already Favored—Mr. Alderman also noted that the survivor-benefit provisions proposed would be more liberal than those of the general social security system. Meanwhile he had compared social security benefits with those of the present retirement system, finding that the latter "is already highly preferential in favor of railroad employees over the coverage of the Social Security Act for employees in general."

Coming to the other proposed amendments which, though important, would be minor as compared with the survivor-benefit and health-insurance proposals, Mr. Alderman discussed first the plan to permit women employees having 30 years of service to retire with a full anuuity at 60 years of age. At present all employees must have attained age 65 before they qualify for full annuities. The only justification for this proposal, Mr. Alderman said, is "a purely humanitarian one," and he stressed the fact that the present age requirement "was one of the very basic and fundamental provisions agreed upon between the railroads and the employees in the retirement agreement of 1937."

The proposed new disability-retirement provisions, as Mr. Alderman reads them, would not only add $34,000,000 a year to the retirement system's costs, but they would substitute "complicated, indefinite, and troublesome language" for the present provisions which "are simple, precise, easily understood, and easy to apply." Moreover, they, too, would mark a departure from the 1937 agreement, which prompted the Southern's general solicitor to suggest that such labor run-outs on agreements might make management a bit skeptical of future bargaining proposals.

Blow to Ry. Labor Act—"The railroads," he said, "earnestly submit that that is no way to make and maintain collective bargaining agreements as required by the Railway Labor Act. Such agreements are not maintained if they are to be set aside unilaterally by one of the parties by the device of asking Congress to change the agreed legislation based on the agreement. For Congress to acquiesce in such a request would be the most destructive thing that could be done to collective bargaining under the Railway Labor Act. The railroads would have no further incentive to make such national collective bargaining agreements. An agreement that does not bind both parties is simply no agreement at all."

The proposed increase in the minimum pensions, which would add $12,000,000 a year to the cost of the retirement system, was characterized by Mr. Alderman as "no trivial departure" from the 1937 agreement. The broadened coverage proposals, bringing in such employees as those of freight forwarders and railroad trucking subsidiaries, would actually change the parties to the agreement. Among these new coverage proposals are those which would write into the law certain Retirement Board rulings as to coverage, and, as Mr. Alderman put it, they would confer on R. R. B. "arbitrary and virtually unreviewable administrative discretion." The railroads believe that the new coverage provisions could be stretched to bring in "a host of companies, such as the Union News Company and other companies, furnishing restaurant or other food facilities, pursuant to arrangements with carriers."

Unfair to Train Service—The proposal to make compensation creditable up to an average of $300 per month in any calendar year instead of up to $300 in each calendar month as at present is "a slyly concealed tax-base increase in addition to the tax-rate increases proposed in the bill," according to Mr. Alderman. He cannot believe that the employees who are supporting the bill have understood the significance of this proposed change, "because its

* * *

The Genessee Southern Ceases Operations

Following a three-day farewell exhibition, March 9 to 11, in the New York Central station, at Rochester, N. Y., the Genessee Southern, a two-rail, "O"-gage model railroad, comprising over 6½ scale miles of track, 125 cars, 12 locomotives, engine terminal, yards, several stations, control boards and 12 telephones connecting towers with the dispatcher's office, went into storage until new quarters might be secured.

For more than five years, the Genessee Southern has enjoyed the use of an unoccupied restaurant (now rented) in the N. Y. C. station, and in that time the model railroad's personnel, numbering some 35 doctors, engineers, brakemen and clerks, has devoted thousands of hours to making this one of the most technically-accurate model roads in the country. In the past, school children studying the various phases of transportation have been attracted to the road's exhibitions, and during the last large showing, some years ago, 7,000 visitors looked the road over in a single week.

only possible effect is to increase the taxes to be paid by the employees just as it would increase the railroads' taxes."

The "most striking tax-increase results," he explained, would be in such crafts as train and engine service, where the employees are relatively highly paid when they work a full month, but where self-imposed mileage limitations prevent them working more than a certain number of months a year. "They may," Mr. Alderman added, "earn well over $300 in full-time months and small amounts or nothing in months where they are caught by their mileage limitations. In every such case, the changed definition would increase their taxes." Also there would be "tremendous" complications in accounting.

In proposing to change the concept of "compensation" to include personal injury settlement, Mr. Latimer "is seeking to have Congress write specifically into the law his views and decisions, which we are most certain are legally erroneous views and decisions." That is what Mr. Alderman charged after looking over this proposal, which illustrated for him "the characteristic back-door approach of bureaucratic draftsmen." The proposal to credit red caps with prior service for the period when they had no status as railroad employees is viewed by the railroads as an "unconstitutional" provision, and "its enactment would prejudice the validity of the whole act."

Non-Operating Vacation Dispute Ends

The lengthy dispute between non-operating unions and railroads concerning vacations for non-operating workers came to an end at Chicago last week after mediation conferences conducted by Frank P. Douglas, a member of the Mediation Board. Under the terms of the settlement, most of the non-operating workers will receive one week's vacation annually up to five years of service and two weeks annually after five years. The new arrangement, however, does not affect clerks and telegraphers, who remain on the old 6-9-12 schedule for one, two and three years respectively.

Chairman H. H. Schwartz of the National Railway Labor Panel on March 5 issued an authorization permitting the participating railroads and other roads to make the new agreement effective. Under the stabilization program, authority to issue such authorizations rests with the N. R. L. P. chairman with respect to voluntary wage adjustments involving carriers subject to the Railway Labor Act. Nothing in the authorization, it says, "shall be construed as directing or ordering any carrier" to establish the new vacation arrangements.

Bills in Congress

Representative Knutson, Republican of Minnesota, has introduced H.R. 2421, a bill "to treat certain predecessor and successor railroad corporations as the same taxpayer for the purposes of certain provisions of the Internal Revenue Code." The proposal is similar to that embodied in a bill sponsored by Mr. Knutson in the previous Congress; the effect would be to give a reorganized railroad company the benefit of, any right which its predecessor had to carry forward excess profits tax credits and operating or other losses.

H.R. 2406, another uniform freight rate and classification bill, has been introduced by Representative Harris, Democrat of Arkansas. H.R. 2495, another bill to prohibit discrimination in employment because of race, creed, color, national origin, or ancestry, has been introduced by Representative Hoffman, Republican of Michigan.

Pullman Exhibits "Tomorrow's Trains Today" in N. Y. Show

In a private preview for railroad executives and the press at the Waldorf-Astoria, New York, March 5, the Pullman-Standard Car Manufacturing Company, brought forth in its "Tomorrow's Trains Today" exhibit advanced passenger car designs "intended to be of practical service to the entire railroad industry," and Thomas P. Gorter, Pullman vice-president, indicated that this company is prepared to resume passenger car construction as soon as such permission is granted.

Included in the exhibit are the Day-Nite coach, the three-tier sleeper, duplex roomettes, the club car with its miniature theater and night club, the three-deck coach for suburban service, and such fine points as hot box alarm systems, trucks with shock absorbers and soft springs with ample travel, improved lighting and communications, low angle reclining seats with folding leg rests, diagonal seating for reducing aisle congestion in dining cars, distinctive styling for exteriors, and more room luxuries than have yet been installed.

"When we get the green light we can shift into high gear production, immediately," Mr. Gorter declared, "providing materials and skilled manpower are available."

Won't Require '45 Material and Supplies Inventory

Because of the "acute shortage of experienced personnel" on the railroads, the Interstate Commerce Commission has waived for the year 1945 the requirement of note B to Account 716 relating to the taking of inventory of materials and supplies during each calendar year. The relief, which continues the commission's wartime policy, came in an order by Division 1, dated February 26.

Status of Railway Truckers on Intrastate Routes

The relationship between an interstate railroad and a highway affiliate operating entirely within a single state does not affect the status of the latter under that provision of the Interstate Commerce Act's section 206(a) which stipulates that motor carriers on intrastate routes may, under specified conditions, operate lawfully in the carriage of intrastate passengers or property without a certificate from the commission. The commission's Division 5 has thus construed the provision in a report in the No. MC-28880 proceeding involving operations of the Monon Transportation Company, affiliate of the Chicago, Indianapolis & Louisville, between French Lick, Ind., and Mitchell.

The commission found that the operation comes within the partial exemption proviso. In previous decisions it had refused to so find in cases where a motor carrier on an intrastate route was also associated in some way with motor operations in other states. In distinguishing between such cases and the present one wherein the affiliated out-of-state operator is a railroad, the commission interpreted the pertinent language in section 206(a) as referring only to "operations by motor vehicle."

The majority report represents the view of Commissioners Lee and Rogers. Commissioner Patterson, dissenting in part, was of the opinion that the Monon operation was not within the exemption proviso.

Freight Car Loading

Loadings of revenue freight for the week ended March 3 totaled 785,264 cars, the Association of American Railroads announced on March 8. This was an increase of 13,421 cars, or 1.7 per cent above the preceding week, a decrease of 1,629 cars, or 0.2 per cent below the corresponding week last year and an increase of 36,338 cars, or 4.9 per cent above the comparable 1943 week.

Loading of revenue freight for the week ended February 24 totaled 771,843 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended, Saturday, February 24

District	1945	1944	1943
Eastern	152,557	157,507	156,999
Allegheny	169,815	174,502	170,533
Pocahontas	57,000	55,411	59,651
Southern	127,534	123,965	128,925
Northwestern	78,617	85,814	79,226
Central Western	118,876	114,897	115,341
Southwestern	67,444	68,888	72,246
Total Western Districts	264,937	269,599	266,813
Total All Roads	771,843	780,984	782,921
Commodities			
Grain and grain products	40,464	48,084	50,668
Live stock	12,892	15,648	12,398
Coal	170,317	177,135	178,549
Coke	15,479	15,306	15,229
Forest products	37,466	42,556	43,230
Ore	12,191	13,322	14,654
Merchandise l.c.l.	101,475	102,271	93,758
Miscellaneous	381,559	366,662	374,435
February 24	771,843	780,984	782,921
February 17	783,738	774,237	752,019
February 10	755,436	793,181	765,271
February 3	738,680	805,714	755,514
January 27	758,870	810,890	734,670
Cumulative Total 8 Weeks	6,051,241	6,312,816	5,966,363

In Canada.—Carloadings for the week ended February 24 totaled 66,262 as compared with 65,814 for the previous week and 68,330 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
Feb. 24, 1945	66,262	38,794
Feb. 26, 1944	68,330	41,530
Cumulative Totals for Canada:		
Feb. 24, 1945	509,422	278,911
Feb. 26, 1944	538,393	309,027

January Truck Traffic

Motor carriers reporting to the American Trucking Associations, Inc., transported in January 2,123,528 tons of freight, an increase of 7.9 per cent over the 1,968,283 tons reported for December, 1944, and

of 0.5 per cent over the January, 1944, total of 2,112,280 tons. The A. T. A. index, based on the 1938-1940 average monthly tonnage of reporting carriers, was 185.94, as compared to 169.94 in December.

The foregoing figures, according to the A. T. A. announcement, are based on reports from 280 carriers in 43 states. Truckers in the Eastern district reported an increase of 7.2 per cent above December, but a decrease of 1.8 per cent from January, 1944. In the Southern region there was an increase of 6.0 per cent over December and of 2.1 per cent over January, 1944. Increases also were reported from the Western district, which was 10.1 per cent ahead of December and 5.4 per cent above January, 1944.

Cook Reappointed to N. M. B.

President Roosevelt on March 1 sent to the Senate his reappointment of George A. Cook to membership on the National Mediation Board for a new term expiring February 1, 1948. A former secretary of the board, Mr. Cook has been a member since 1938.

His previous term expired on February 1, and the President's failure to act promptly has left the office vacant for more than a month, there being no provision in the Railway Labor Act whereby a member of N. M. B. may carry on after his term has expired or until his successor qualifies.

Racial Discrimination Unlawful for N. Y. Employers

Employers in New York State are henceforth required by law to hire and promote employees without discrimination among them because of race, creed or national origin. Such is the provision of an "anti-discrimination" bill, enacted by the legislature and which Governor Dewey has announced he will approve.

A commission is to be established which will hear complaints of such discrimination and, where these are determined to be well-founded and the defendant refuses to "cease and desist," fines and jail sentences may be imposed.

Coal Priority List

A priority list which can be used, if needed, to channel coal to essential war and civilian users during short periods of emergency when their stockpiles drop to the danger line has been announced by the War Production Board. Railroads stand high on the list, being in class 2.

Class 1 includes "any plants only to the extent necessary to prevent irreparable damage to equipment that may result if a coal shortage exists, subject to special certification by the district managers of W. P. B."

The listing of the railroads indicates that they qualify "if less than seven days' stockpile, including coal on ground and consigned to railroad on track, is available." The announcement stated, however, that exceptions to the stockpile limitations for class 2 users "may be granted when necessary to prevent stoppage or substantial curtailment, considering time required for delivery of coal." The Solid Fuels Administration for War is making arrangements to implement the priority plan, and W. P. B. has suggested that such arrangements make the Office of Defense Transportation the agency for issuing priority classifications for railroad fuel.

Lea Would Have the House Print Two B. I. R. Reports

House Resolutions 164 and 165 have been introduced by Chairman Lea of the committee on interstate and foreign commerce to provide for the printing as House documents of the Board of Investigation and Research reports on Carrier Taxation and Public Aids to Domestic Transportation.

The subject matter of these reports embraces two of the three specific assignments given B. I. R. by the Transportation Act of 1940. The reports were among 13 submitted to Congress and the President late on the afternoon of the board's last day in office—Septe,mber 18, 1944.

Part of International Under Retirement Act

The Interstate Commerce Commission, Division 3, has found that the North Tonawanda-Lockport-Olcott Freight Division of the International Railway Company since October 31, 1937, and the Buffalo-Lockport-Olcott Division of that same company from August 28, 1935, to October 31, 1937, have not fallen within the terms of the exemption proviso of sections 1(a) of the Railroad Retirement Act, Railroad Unemployment Insurance Act, and Carriers Taxing Act. The proceeding (Electric Railway Docket No. 17) was instituted by the commission at the request of the Railroad Retirement Board.

Howard Succeeds Dow as O.D.T. Liquid Transport Head

The resignation of Fayette B. Dow as director of the Office of Defense Transportation's Liquid Transport Department was announced March 5. His successor is Porter L. Howard, consultant in that department, who was general traffic manager for the Sun Oil before joining the O. D. T. staff in 1941. Mr. Dow came to O. D. T. after having been associated with Ralph Budd during his term of service as transportation commissioner under the Council of National Defense.

President Signs Rivers Bill

President Roosevelt has signed the recently-enacted rivers and harbors bill which authorizes "non-controversial" projects estimated to cost a total of $381,968,332.

Wallace Takes Over Commerce Post; Vinson Heads R. F. C.

Former Vice-President Henry A. Wallace took his oath of office as Secretary of Commerce last week, his appointment having been confirmed by the Senate on March 1. The way was paved for the Senate's favorable action by enactment and approval by President Roosevelt of S. 375, the bill sponsored by Senator George, Democrat of Georgia, to remove the various government lending agencies, including the Reconstruction Finance Corporation, from Commerce Department jurisdiction.

The former Secretary of Commerce, Jesse H. Jones, had served also as Federal Loan Administrator, a position to which President Roosevelt this week appointed Fred M. Vinson, who has been director of the Office of Economic Stabilization.

With the confirmation by the Senate of Mr. Vinson's appointment on March 6, the President named William H. Davis, who has been chairman of the National War Labor Board, to the directorship of O. E. S. The O. E. S. director no longer has authority to pass on railway wage adjustments made in accordance with Railway Labor Act procedures.

House Committee Approves Land-Grant Repealer

The House committee on interstate and foreign commerce on March 6 voted to report favorably to the House the bill introduced by Representative Boren, Democrat of Oklahoma, to repeal remaining provisions of the land-grant-rate laws. The bill, H.R. 694, is the same as the previous Boren bill which was passed by the House last year, only to die with the seventy-eighth Congress when the Senate failed to act on the amended version reported from its committee on interstate commerce.

Chinese Engineers Begin U. S. Railroad Training

The first 39 of a group of 110 Chinese engineers who are to be trained on American railroads have arrived in this country, according to Colonel J. Monroe Johnson, director of the Office of Defense Transportation. The other trainees are expected to follow ater in the year, he said. Brigadier General Charles D. Young, deputy director of the O. D. T. will be in general charge of the program.

The English speaking trainees, Colonel Johnson said, are graduate engineers of Chinese colleges and have a minimum of three years' continuous experience on railroads in China. They have been selected for their ability, leadership, scholastic attainment and aptitude for railroad work, he added.

While in this country the Chinese will take a special training course which has been worked out with the cooperation of American management and labor officials. They will receive practical experience, and frequently will be shifted from place to place. All will return to their own country when their training has been completed.

The purpose of the training program, Colonel Johnson explained, is to educate these Chinese railroad men in the science of railroading as carried on in this country so that they will be better able to help the Chinese railroads meet urgent war and postwar needs.

The Chinese will be trained on 12 railroads. Western railroads which will take a total of 60 trainees are the Santa Fe, the Burlington, the Milwaukee, the Illinois Central, the Southern Pacific, the Union Pacific, and the Great Northern. The other 50 will be assigned to the Pennsylvania, the Baltimore & Ohio, the New York Central, the Louisville & Nashville, and the Southern.

The trainees' subsistence will be borne

entirely by lend-lease. The program will be administered by the International Training Administration, a non-profit corporation performing similar functions in connection with training programs being carried out in other industries. Railroad representatives on the joint committee supervising the program are E. H. Piper, assistant to the executive vice-president of the Burlington, and Dan M. Sheaffer, assistant to the vice-president in charge of operation of the Pennsylvania. L. E. Dale, transportation engineer of the Association of American Railroads, is secretary of the committee.

Railroads Affected by Ohio River Flood

With the floodwaters of the Ohio expected to have reached their crest on Wednesday, March 7, when they were about 10 ft. below the all-time record flood of 1937, railroads looked with some confidence to the return of normal operations, although as this issue goes to press annulments still obtain on some runs and considerable traffic is being diverted around the most seriously affected cities of Louisville, Ky., Cincinnati, O., and to a lesser degree, Pittsburgh, Pa.

The Pennsylvania has reported that, effective Wednesday, inbound and outgoing trains at Cincinnati were terminated at Norwood station, because the Baltimore & Ohio tracks near Winton Place on the route to Union terminal were out of service. Also, all trains between the East and Cincinnati were being detoured because of water over the tracks between Xenia, O., and Cincinnati. The detour involved movement of the P. R. R. trains from Xenia to Dayton, O., where they went via the B. & O. to Hamilton, O., and from Hamilton to Cincinnati operation was resumed over the Richmond branch lines.

The Chicago-Florida traffic also encountered rerouting, the "Southwind," leaving Chicago Wednesday, being moved on the Chicago & Eastern Illinois via Evansville, Ind., instead of direct from Chicago to Louisville. Between Cincinnati and Louisville and in Cincinnati, where the flood had passed the 68-ft. level, the Louisville & Nashville line was put out of service, and on all lines which could be used for detour the following changes were made: The New York to Memphis sleeper on Train 41 to Cincinnati was annulled as well as the New York to Nashville (Tenn.) sleeper on train 41. Further cancellations included the New York to Birmingham (Ala.) sleeper, the Memphis to New York and the Birmingham to New York trains. And, effective with departures from New York and Louisville on Wednesday, and until further notice, the New York-St. Louis sleeper off train 41 will operate on train 31, the St. Louis train from New York to Indianapolis (Ind.) and to Louisville returning instead via Cincinnati.

The P. R. R. further reported that in Pittsburgh, at its produce yard and its 11th Street freight station, cars were removed because of high water, but that by Thursday it was possible to return them to these yards.

The Baltimore & Ohio reported traffic at a standstill between Cincinnati and St. Louis (Mo.) because of high water over the tracks at Cincinnati. Passenger traffic from St. Louis was detoured Tuesday at East St. Louis via the New York Central to Indianapolis, the Pennsylvania to Dayton, and finally over the B. & O. line to Deshler, O., and eastward.

On Wednesday freight and passenger traffic was diverted from St. Louis over the Alton to Chicago and East, and westbound traffic via the same route. Traffic between Parkersburg, W. Va., and Cincinnati on its Ohio division was also at a standstill, the railroad announced, with water in the Parkersburg Anne Street station, and also over the yards at Wheeling and Parkersburg. Passenger service between Parkersburg and Huntington, W. V., was also annulled. Traffic through Pittsburgh was moved over the Pittsburgh and West Virginia.

The Chesapeake & Ohio reveals that operations west of South Portsmouth, Ky., were discontinued about 6 P. M. Tuesday, and passenger trains, and some freight trains in and out of Cincinnati were operating via the Louisville & Nashville to Winchester, Ky., and via the C. & O. back to its main line at Ashland, Ky. There is no interference with operation on the railroad's line east of South Portsmouth, nor on the line running north through Columbus, O., to Toledo, and freight that normally routes through the Cincinnati gateway is being diverted and handled currently through Columbus and Toledo, and junctions intermediate thereto.

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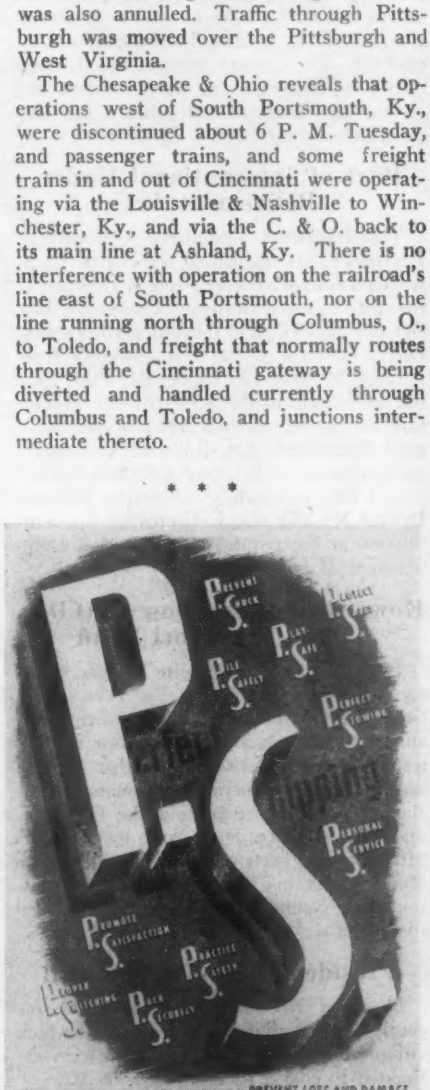


9th Annual Shipping Campaign

Although the 1945 perfect shipping campaign is essentially directed at shippers and intended to stem the huge waste of freight lost and damaged in transit (the figure reached $60 million in 1944), it gives opportunity also for the railroads to improve their own handling of goods—after they leave the shipper and before they reach the consignee—such as observances of careful practices in the freight houses, application of good principles in loading, accurate billing and the like.

The April campaign, announced in the *Railway Age* of March 3, and conducted by the Shippers Advisory Boards and their 24,000 members, the Association of American Railroads and other transportation bodies, looks to educational appeals, such as the above poster to help drive the campaign home. The original of poster pictured above measures 14 in. by 18 in. and is produced in color.

The Illinois Central has reported service between Ft. Knox, Ky., and Louisville, has been stopped but the extent of damage to track is not yet known. The Big Four reports that the "James Whitcomb Riley," between Chicago and Cincinnati had been stopped at Indianapolis and returned to Chicago.

Other Big Four service between Chicago and Cincinnati is being detoured via Indianapolis, east to Losantville, Ind., and then to Cincinnati.

Control of C. & O. Held Law Violation

(*Continued from page 460*)

directors on February 20, 1940, an arrangement was made by which Mr. Young and one other director were named by Alleghany, but, Mr. Boles remarks, "Alleghany did not at this time regain control of the Chesapeake & Ohio through majority representation on the board."

Control "Regained"—Alleghany's problem of "regaining" control of the C. & O. was tied in with the larger problem of working out modifications of its bond indentures, the report goes on to say, since substantially all of Alleghany's assets were controlled by the trustees during the five years preceding 1941. The Guaranty Trust Company meanwhile had resigned as trustee under two indentures, retaining that connection under a third, and a plan was worked out under which the interests of the successor trustees were reconciled, and all agreed to changes in terms of the indentures, one result of which was to restore to Alleghany the right to vote all shares of stock pledged thereunder, irrespective of the collateral ratio. This agreement became operative August 30, 1941, at which time Alleghany held 23,37 per cent of the outstanding C. & O. common stock. At the next C. & O. stockholders' meeting, April 21, 1942, according to the report, a number of changes were made in the board of directors, with the result that "for the first time since Young and Kirby acquired a controlling interest in Alleghany," Mr. Boles finds, "undisputed control of the Chesapeake & Ohio and its subsidiaries, including the Nickel Plate and Pere Marquette, was vested in Alleghany."

Turning then to the contention that, even if Alleghany did not have actual control of the C. & O. between April, 1938, and 1942, it nevertheless had at all times power to exercise control, and did exercise it prior to September 18, 1940, the report observes that "at no time" after April, 1938, and prior to the indenture amendment of August 30, 1941, did Alleghany have even conditional power to acquire the right to vote a controlling interest in C. & O. stock, but only the power to vote a maximum of 24 per cent of the outstanding shares. "The test of the existence of power to exercise control is the ability of the person possessing it to exercise it when occasion for its exercise arises," Mr. Boles says. Reviewing the changes in the C. & O. board between 1938 and 1942, he adds, "the conclusion is inescapable that Alleghany had no power to control Chesapeake & Ohio at any time from the spring of 1938

until after the amendment of its indentures on August 30, 1941."

1940 Act Expanded Section 5—Mr. Boles differs with Alleghany in the interpretation of section 5, he continues, because he does not accept the contention that, even if the indenture amendments in 1941 resulted in Alleghany's acquisition of control, they did not result in effectuation of control in a common interest of two or more carriers, within the meaning of the statute. The C. & O. had previously acquired control of the Nickel Plate and the Pere Marquette with the commission's approval, he concedes, but the three roads continued to be operated by separate carrier corporations with their own managements and boards of directors. Moreover, he adds, the legislative history of the 1940 act does not show, as contended by Alleghany, that the amendments made by that act did not enlarge the scope of section 5 so as to make it applicable to the acquisition of control of several carriers already under common control.

Assuming, however, that section 5 (4) was not meant to apply to a transaction of this character, it still would apply to Alleghany's acquisition of control of the C. & O. if at that time Alleghany already was in control of U. S. Trucking, Mr. Boles points out. From 1937 until late in 1942, he says, all the stock of U. S. Trucking was held by United States Distributing Corporation, which was controlled through stock ownership by the Pittston Company. From 1938 to 1942, inclusive, he adds, except in 1939, Alleghany owned and voted more than 50 per cent of the stock voted at Pittston annual meetings. Even in 1939 a majority of Pittston's directors were also Alleghany directors, and Alleghany in that year made managerial changes in Pittston which have continued in effect. "It thus appears that late in 1941 or early in 1942, Alleghany, when it regained control of Chesapeake & Ohio and its subsidiaries, already had control of another carrier, and that by acquiring control of the railroad companies it not only entered into a transaction within the scope of section 5 (2) (a) without the approval and authorization of the commission, but that it also accomplished or effectuated the control of management in a common interest of two or more carriers without the commission's approval or authorization and in violation of the provisions of section 5 (4)."

Sees Change in Character of Control—Taking up another argument, Mr. Boles remarks that, "assuming that Alleghany had some measure of control of Chesapeake & Ohio and the other rail carriers from the spring of 1938 until August 30, 1941, the change in the character, type and extent of Alleghany's control resulting from the dissolution of Chesapeake Corporation, the amendment of the indentures, and the steps taken by Alleghany following the amendment, was such as to constitute an acquisition of control requiring the commission's authorization." If it be conceded that Alleghany had power to exercise control of C. & O. in the 1938-1941 period, but did not exercise that power, then its subsequent exercise constitutes a change in the character of control, for which I. C. C. approval is required, the report observes.

Having so discussed the various arguments by which Alleghany sought to show that control of two or more carriers was not acquired after September 18, 1940, and in violation of section 5 (4), Mr. Boles recommends that the commission should find that Alleghany accomplished control of the three railroads and U. S. Trucking prior to 1933; that it lost control of the three railroads in 1938 and reacquired it late in 1941 and early in 1942; that at the time it so acquired control of the three railroads it was in control of U. S. Trucking; that Alleghany was controlled by Messrs. Young and Kirby when it so acquired control of the three roads, thus indirectly giving them control; and that control was acquired and maintained in violation of section 5 (4). He further recommends that the commission should enter an order requiring Alleghany, the C. & O., Messrs. Young and Kirby to take steps necessary to prevent a continuance of such violation, but would first afford the parties an opportunity to make suggestions as to action to be taken to divest Alleghany and Messrs. Young and Kirby of control of the railroads.

Use of Aluminum a Matter of Economics

(*Continued from page 460*)

their lighter weight, he went on to say, and the difference between the costs of aluminum and steel may not be "an almost insuperable barrier to the use of the lighter-weight alloys, as it once was."

The "Inertia" Question—Other factors to be considered, General Young explained, are the opportunity to reduce the ratio of the weight of the car to that of the load, utilizing the full carrying capacity of the axle, and the possibility of moving more empty cars with a locomotive of given capacity. On the other hand, aluminum is still more subject than steel to damage from blows and abrasion, he suggested. In his opinion, final decision between steel and aluminum for hopper car construction will depend largely on initial cost, then on the relative advantages of the materials. Another point to be considered, he added, is the "inertia" of designers, purchasers and users.

General Young expressed the view that choice between aluminum and ferrous alloys for passenger car construction will be largely a matter of personal leaning, influenced by advances in the art of design. In any event, the quantity of materials required for passenger car manufacture at a "normal" rate of around 400 cars a year would be relatively small, he said.

A "Pandora's Box"—To adopt a suggestion that had been made that a higher per diem charge be assessed for cars built of light-weight material, as compensation for the special characteristics of such cars, would, in General Young's opinion, "be little short of opening deliberately a Pandora's box."

Mr. Hawthorne explained that the problem is as much one of economics as of design. The railroads, he told the committee, "fully appeciate that there is no profit in hauling unnecessary dead weight and that their profit comes from the freight and passengers carried in their equipment. On the other hand, there is no economy in paying too much of a premium for weight saving either in higher first cost, increased maintenance expense or reduced life of the equipment. Present types of railway equipment have a relatively long useful life with moderate maintenance expense. To develop the comparative merits of equipment constructed of new materials requires a long period of experience with such equipment. Where the new materials result in increased first cost of equipment, it becomes very important that the usefulness and economy of equipment be increased through heavier loading, increased efficiency of operation, reduced maintenance costs and increased useful life."

Near Future Prospects—After outlining some technical considerations controlling the selection of freight car materials, Mr. Hawthorne remarked that, "with these factors of high cost of material and prices not yet solved and the further fact that other materials are available, the use of which permits approximately the same weight reduction in equipment, it is not believed that there will be any great demand for the use of aluminum in freight car construction in the immediate future. . . . These conditions do not apply to an equal degree in passenger car equipment, but in such equipment aluminum will also be in competition with both stainless steel, where the price differential is not so much involved, and also with low alloy high tensile steel where the reduction in weight of equipment approximately balances increased cost of the material."

On the same day the committee also received a statement by W. E. Bettendorf, president of the Bettendorf Company, in which he indicated an intention to use aluminum in the manufacture and assembly of certain railroad equipment, such as l.c.l. containers and refrigerator car floor racks, when released from war poduction, but he suggested that the introduction of aluminum on a large scale in the manufacture of railroad equipment will be a gradual process, and largely a matter for future determination through actual use.

Emergency Board Created

President Roosevelt on March 7 issued a proclamation creating an emergency board to investigate a wage controversy on the Des Moines & Central Iowa where a strike had been set for the 8th. The employees, represented by the Brotherhood of Locomotive Engineers and Brotherhood of Railroad Trainmen, are demanding a wage increase of nine cents per hour.

I. C. C. Brings Decision Into Line with Court Ruling

Reporting on reconsideration of the No. MC-42614 proceeding involving a Chicago & North Western application for certificates covering certain truck routes, the Interstate Commerce Commission, Division 5, has brought its findings into line with the decision of the United States Supreme Court. The Supreme Court passed on the case (*Thompson* v. *United States*, 321 U. S. 19) on January 17, 1944 (see *Rail-*

way Age of January 22, 1944, page 258).

The commission had held that the certificates should go to contract truckers which had been employed by the North Western to operate the routes involved. The court reversed this finding, holding that the railroad was entitled to the certificates. The further consideration of the case by the commission was for the purpose of determining the scope of the operations to be covered by the certificates it would issue to the North Western.

The report grants certificates under the Motor Carrier Act's "grandfather" clause, covering operations over 19 routes between various points in Illinois, Wisconsin, Michigan, Iowa, Nebraska, and South Dakota. Continuance of operations on a route between Rochelle, Ill., and Ashton, which was opened after the "grandfather" date of June 1, 1935, is authorized on the basis of a showing of public convenience and necessity. Certificates were denied covering two routes between Proviso, Ill., and Woodstock, and between Proviso and Chicago.

C. & N. W. Reorganization Ends

With the signing of an order last week by Federal Judge Barnes of Chicago, turning over the property to its new owners, ten years of reorganization of the Chicago & North Western came to an official end. In signing the order and thereby relieving Trustee Claude A. Roth, Judge Barnes said: "We cannot be proud to think that it took ten years to complete this reorganization, but we did it as quickly and efficiently as possible under the machinery Congress has devised for such proceedings."

Would Pry Hobbs Bill Out of Senate Committee

Senator McCarran, Democrat of Nevada, has introduced Senate Resolution 94 to discharge the Senate committee on interstate commerce from further consideration of the House-approved bill (H.R. 37) sponsored by Representative Hobbs, Democrat of Alabama, to restrict the Interstate Commerce Commission's power to reduce the capitalization of railroads in section 77 reorganization proceedings, and to give the courts additional power in shaping such reorganization plans.

Emergency Board Report

The White House last week made public the report submitted to the President late in December by the emergency board which investigated a dispute between the Steelton & Highspire and its employees represented by the Brotherhood of Locomotive Firemen and Enginemen and the Brotherhood of Railroad Trainmen. As noted in the *Railway Age* of December 23, page 973, the dispute involved principally "full crew" demands of the two brotherhoods.

With respect to the B. of L. F. & E. demand for a "fireman" on all Diesel locomotives, the board recommended that a "fireman" be added to the crews of the two largest of the road's five Diesels—not to the other three. As to the B. of R. T. demand for an additional brakeman in yard crews, the board found that the additional man was not needed in every crew; but it was unable to say which crews should be enlarged and which should not. Another matter in dispute was a rule proposed by both brotherhoods for a minimum day's pay for service on work other than an employee's regular assignment. The board recommended that employees so assigned be paid at the rate established for the service performed, but in no case less than their regular rate. Finally, it recommended that certain wage adjustments embodied in a tentative agreement be made retroactive to December 16, 1942.

Members of the board were Professor I. L. Sharfman of the University of Michigan; Lief Erickson, justice of the Supreme Court of Montana; and Grady Lewis, Washington, D. C., attorney.

Supply Trade

The **Clark Equipment Company,** Buchanan, Mich., has been awarded the Army-Navy "E."

The **Overland Supply Company,** 116 New Montgomery Street, San Francisco, Calif., has been appointed sales representative of the **Symington-Gould Corporation.**

Donald J. Reese, who has been with the steel division of the War Production Board at Washington, D. C., since April, 1942, has resumed his duties with the development and research division of the **International Nickel Company** at New York.

W. B. Holton, Jr., president of the **Walworth Company,** has been elected president of the **Valve Manufacturers Association** to succeed **Ernest Cochran,** vice-president of the Chapman Valve Manufacturing Company.

J. H. Patterson has been appointed manager of the **Cummins Diesel Export Corporation** of New York, subsidiary of the Cummins Engine Company, Columbus, Ind. Mr. Patterson formerly was division manager of the National Refining Company.

Alton Parker Hall has been appointed general manager of sales of the **American Chain & Cable Co.,** with headquarters in New York. Mr. Hall joined the company about a year ago as assistant general manager of sales after having been with the Bethlehem Steel Company for 22 years.

H. Z. Benton has been appointed to the engineering staff of the **American Phenolic Corporation,** Chicago, in charge of design and production on tube sockets for radio, radar, television and industrial uses and to supervise engineering and research on specialty antennas. Mr. Benton formmerly was chief engineer of the Crowe Nameplate & Manufacturing Co.

Walter F. Myers has been appointed to the staff of the Washington, D. C., office of the **Cooper Bessemer Corporation** to assist Charles G. Cooper, director of that office, in the handling and supervision of government contracts and sales and service in the southern Atlantic states. For the past 25 years, Mr. Myers has been employed as sales engineer, construction engineer and consulting engineer for public and private corporations, including the Fairbanks Morse Company, the Federal Power Commission and the United States Maritime Commission.

The **Baldwin Locomotive Works** has issued its preliminary report of the estimated results of operations during 1944. The report is preliminary pending completion of the renegotiation of war contracts. The report shows net profit of $5,264,465 for transfer to surplus as follows:

Sales	$225,725,737
Cost of Sales (incl. admin. and general exp.)	$187,697,791
Depreciation	1,410,185
Amortization of Emergency Facilities	908,239
Operating Profit	$35,709,522
Interest and Misc. Income	$509,185
Dividends Received	755,794*
Interest and Misc. Expenses	460,036
Profit before Renegotiation and Income Taxes	$36,514,465
Provision for renegotiation, income taxes and increase of contingencies and post-war transition reserve, net of post-war credit on federal excess profits tax	$31,250,000
Balance to Surplus	$5,264,465
Dividends Paid	
on preferred stock	$163,029
on common stock	1,959,512
Current Assets	$60,665,368
Current Liabilities	$43,498,152

* Including $737,400 from the Midvale Company.

Launching a greatly expanded sales and service program, the **Thomas Machine Manufacturing Company,** Pittsburgh, Pa., has announced the appointment of sales agencies in 16 major cities to handle Thomas equipment for all of the United States east of the Mississippi river. Similar agencies for territory west of the Mississippi will be announced shortly. The new agents are: the **General Machinery Corporation,** Boston, Mass.; **Giebel, Inc.,** New York and New Haven, Conn.; the **C. H. Briggs Machine Tool Co.,** Syracuse, N. Y.; **W. W. Wentz,** Rochester, N. Y.; the **J. L. Osgood Machinery & Tool Co.,** Buffalo, N. Y.; the **L. A. Benson Company,** Baltimore, Md.; the **Smith Courtney Company,** Richmond, Va.; the **Chandler Machinery Co.,** Atlanta, Ga.; the **George D. Miller Company,** Cleveland, Ohio; the **Brokaw Machinery Co.,** Cincinnati, Ohio; **Joseph Monahan,** Grand Rapids, Mich.; the **Bryant Machinery & Engineering Co.,** Chicago; **Quinn & Quinn,** Birmingham, Ala.; the **Noland Company,** Chattanooga, Tenn.; and **Frederic & Baker,** Shreveport and New Orleans, La.

The **American Engineering Company** has acquired the entire outstanding stock of the **Cochrane Corporation,** Philadelphia, Pa., and the **Faraday Electric Corporation,** Adrian, Mich., in a move to broaden the activities of the company. Faraday manufactures electric signaling devices and specialized electrical household appliances and Cochrane produces various products used in the industrial and power plant equipment fields. Both companies will be operated as subsidiaries of the Ameri-

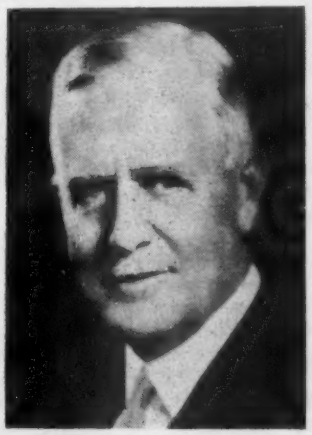
can Engineering Company. **Percy S. Lyon** will continue to serve as president and director of the Cochrane Corporation, and will become a director of American Engineering.

A. D. Bruce has been elected president of the **Vapor Car Heating Company,** Chicago, to succeed **W. L. Conwell,** who

A. D. Bruce

becomes chairman of the board. **L. H. Gillick** has been elected vice-president in charge of sales and **E. A. Russell,** vice-president in charge of research and engineering.

Walter L. Conwell was born in Covington, Ky., in 1877. He was graduated from Pennsylvania University. He was employed as chief engineer of the Tennis Construction Company, railway contractors, in 1908-10, and as a salesman of the West-



W. L. Conwell

inghouse Electric & Manufacturing Co. in 1910-11. He was president of the Transportation Utilities Company from 1911 to 1916. He joined the Safety Car Heating & Lighting Co. as assistant to the president in 1916 and was elected president of that company in 1919. He was elected president of the Vapor Car Heating Company, Chicago, and the Vapor Car Heating Company of Canada in November, 1928. Mr. Conwell is chairman of the board of the Pintsch Compressing Company, president and director of Safety Refrigeration, Inc., and Products Protection Corporation and a director of Overseas Railways, the Wilcolator Company and Carrier Corporation.

Alexander D. Bruce was born in Guelph, Ont., in 1887. His early employment was with a large carriage manufacturing plant and with the Standard Fitting & Valve Co. in Canada. In 1909 he entered the employ of the Chicago Car Heating Company as storekeeper, and was successively purchasing agent and later Canadian manager. In 1917, upon the organization of the Vapor Car Heating Company, he was elected its secretary. In 1926 Mr. Bruce was elected a director and vice-president and in No-

L. H. Gillick

vember, 1940, executive vice-president, the latter position being held until his recent election as president.

L. H. Gillick was born at Minneapolis, Minn., on August 25, 1898, and after attending Northwestern University, entered the employ of the Chicago Car Heating Company, predecessor of the Vapor Car Heating Company, in January, 1916. After completing a period of training in the shops he was appointed inspector in the Chicago district, which position he held until September 1, 1920, when he was pro-

E. A. Russell

moted to Northwest representative of sales and service, with headquarters at St. Paul, Minn. In November, 1925, he was promoted to assistant to the vice-president at Chicago, and in November, 1940, was made sales manager, which position he held until his recent election as vice-president in charge of sales.

Edward A. Russell was born in Pennsylvania in 1887; attended Crane Manual Training School in Chicago and the Armour Institute of Technology. After seven years on the Pennsylvania Railroad, beginning as machinist apprentice, he was employed by the Chicago Car Heating Company as draftsman in 1909. Successively, he has been chief draftsman, design engineer, research engineer, and was chief engineer of the Vapor Company until his recent election as vice-president in charge of research and engineering.

In its annual report for the year 1944, the **Safety Car Heating & Lighting Co.** reports profit from operations and other income before provisions of $1,467,654. This is after the payment, on account, to the Government of $350,000 for renegotiation of profits, which payment actually was made in 1945. Profit as shown is subject to further adjustment for renegotiation. A total of $470,090 or $5 per share was paid on the common stock during the year, leaving earned surplus at the year's end at $1,793,693. In the annual report, W. L. Conwell, president, stated that war orders represented approximately 68 per cent of total orders received and approximately 65 per cent of total billing during the year and that the substantial backlog of orders at the beginning of the year had increased considerably at the year's end.

The **Worthington Pump & Machinery Corp.** has acquired the **Ransome Machinery Company** line of concrete machinery, according to an announcement at the January meeting of Associated Equipment Distributors. The announcement was in the form of an illustrated 48-page presentation entitled "A Preview," which displayed the products in the present combined lines and several new types of equipment under development to be ready for production after the war. All products will carry the "Blue Brute" trade name. **C. F. Oechsle,** Worthington's assistant vice-president, has been appointed in charge of the Worthington-Ransome construction equipment sales organization, with headquarters at Holyoke, Mass. He will be assisted by **W. F. Lockhardt,** sales manager of the Ransome Machinery Company located at Dunellen, N. J., and **W. J. Fleming,** field sales manager, located at Holyoke. Five regional offices in New York, Washington, D. C., Cleveland, Ohio, Chicago and San Francisco, Cal., will afford nation-wide service to the construction industry.

The **Lima Locomotive Works** completed 306 locomotives in 1944, as compared with 359 in 1943, according to the company's annual report. On December 31, 1944, there were 154 locomotives on order. Output of the shovel and crane division was again, as in the previous year, the greatest in its history. At the year's end, unfilled orders for locomotives, power shovels and cranes, forgings, castings, special orders for war materials and miscellaneous items amounted to $26,868,500, compared with $51,512,400 at the close of 1943. Since December 31, additional orders have been booked for 1945 delivery in the

approximate amount of $23,706,500, making a total of $50,575,000 available for this year's production. However, the greater part of these orders is for the U. S. government and subject to reduction or cancellation.

The company's production in 1944, as in prior years, was confined almost exclusively to war contracts. Net sales billed in 1944, before renegotiation, amounted to $51,786,461, as compared with $90,668,476 in 1943, a decrease of $38,882,015. Net profit amounted to $1,436,922 last year, as compared with $1,567,647 in 1943, a decrease of $130,725. In the annual report, Samuel G. Allen, chairman, explained the decrease in sales billed in 1944 was attributable entirely to the discontinuance, late in 1943, of the building of "General Sherman" Army tanks.

The acquisition of new plant property, expanded facilities and an important source of raw material, located in the United States, Canada and Newfoundland, was announced by the **Flintkote Company** of New York following the February meeting of its board of directors. Acquisition of the Whippany, N. J., rubber reclaiming plant of Raybestos-Manhattan, previously operated by the Manhattan Rubber Manufacturing division of Raybestos-Manhattan, transfers to Flintkote the plant and a 55-acre property near Morristown, N. J., which will permit the relocation of certain operations from Flintkote's main plant at East Rutherford, N. J., and provide space for development of other operations.

The Flintkote Company has also purchased the Tile-Tex Company, national manufacturers and distributors of floor coverings. A mining property in Quebec province, Canada, has been acquired by a newly-organized subsidiary of the Flintkote Company, Ltd., Canada, known as Flintkote Mines, Ltd., and construction is under way on mining and milling facilities for the production of various grades of asbestos fibre. It was also announced that the Flintkote Company, Ltd., had entered into an agreement with the Newfoundland Railway Company and the Newfoundland government to supply requirements for creosoted ties and poles under a long-term contract utilizing wood-impregnating plant facilities nearing completion at Clarendon, Newfoundland.

OBITUARY

Albert Sydney Bonner, president of the Clark Equipment Company, Buchanan, Mich., died February 8. He was 53 years of age.

Construction

HARTFORD & SOUTHWESTERN.—This company, which was incorporated in Kentucky February 6, has applied to the Interstate Commerce Commission for authority to construct a 10-mile line in a southwesterly direction from a connection with the Illinois Central at Beaverdam, Ky. Coal would be the principal traffic expected to move over the line which would pass through no incorporated villages or towns.

CHESAPEAKE & OHIO.—This company has applied to the Interstate Commerce Commission for authority to construct a 14-mile extension of its Sandy Valley & Elkhorn subdivision from a point near Jenkins, Ky., southeasterly into Virginia. The line, which would not touch any incorporated towns, would serve coal mining operations not now reached by railroad.

Equipment and Supplies

LOCOMOTIVES

P. R. R. Orders 50 Locomotives

The Pennsylvania has ordered 25 steam locomotives of 4-4-4-4 wheel arrangement from the Baldwin Locomotive Works and 25 of the same type from the railroad's own shops.

The CHICAGO & EASTERN ILLINOIS has placed orders with the Electro-Motive division of the General Motors Corporation, LaGrange, Ill., for two 2,000 hp. Diesel-electric locomotives which will be used as motive power for two new proposed trains, the purchase of cars for which is reported elsewhere in these columns.

The CHICAGO & EASTERN ILLINOIS has ordered 10 cars, including one diner and one lunch car from the Pullman-Standard Car Manufacturing Company, from which will be made up two streamlined passenger trains for service between Chicago and Evansville, Ind., and between Chicago and Thebes, Ill. Delivery of the cars is dependent upon War Production Board authorization of their construction.

FREIGHT CARS

The PAULISTA OF BRAZIL is inquiring for 500 or 1,000 42 metric-ton box cars.

The PENNSYLVANIA has ordered 500 50½-ft. box cars of 50 tons' capacity from the railroad's own shops.

The INTERNATIONAL GENERAL ELECTRIC COMPANY has ordered fifteen 50-ft. steel special flat cars of 50 tons' capacity from the American Car & Foundry Co.

PASSENGER CARS

48 Passenger Cars Sought

Bids will be opened on March 16 at the Seaboard Air Line's offices in Norfolk, Va. for the purchase of 48 passenger-train coaches jointly by the Seaboard Air Line, the Pennsylvania and the Richmond, Fredericksburg & Potomac. Cost of the cars, to be constructed of light alloy, high tensile steel framing with stainless-steel sheathing, is estimated at $3,840,000 or about $80,000 per car. The Seaboard and Pennsylvania will purchase 40 of the cars and the Richmond, Fredericksburg & Potomac the remaining eight. Acceptance of a bid for the Seaboard's share is contingent upon court approval of the proposed contract.

The Seaboard plans to use the new coaches between New York and Florida and between New York and Birmingham, Ala. Between Richmond, Va., and Washington, D. C., the Seaboard uses the Richmond, Fredericksburg & Potomac's tracks and between Washington and New York, the Pennsylvania's tracks.

The R. F. & P. currently is formulating plans for the expansion of its post-war service on a large scale, including the operation of more trains between Richmond and Washington. The eight cars to be ordered are the first of 19 authorized by the road's directors for post-war use.

Abandonments

NORTHERN PACIFIC.—In a proposed report, Examiner J. S. Prichard has recommended that the Interstate Commerce Commission authorize this company to abandon a segment of its main line from New Salem, N. D., to Kurtz, 25.8 miles, upon completion of an alternate 16.5-mile line between these points. The Public Service Commission of North Dakota opposed discontinuance of service to Almont, a station on the line to be abandoned, and local interests urged that operation of a 12-mile portion of the segment of old line be continued so as to serve that point. The examiner found, however, that the traffic to be expected would not be sufficient to support its continued operation. There was no objection to construction of the new line, which is expected to cost about $2,735,200.

SEABOARD AIR LINE.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon a branch from Inverness Junction, Fla., to Inverness, 2.09 miles. The proposal was opposed by the Florida Railroad Commission, which contended that the line is a spur not within I. C. C. jurisdiction under section 1 (18-20) of the Interstate Commerce Act. To obtain a ruling on the question, the carrier's application was filed without prejudice to the contention that the commission was without jurisdiction. Discussing the legal precedents bearing on that question, the division noted that spur lines generally were built to serve a particular industry, and their operations had little or no effect on interstate commerce. In the present case, however, it held, the line was built to serve the public generally and always has served the community as a common carrier, with a regular agency station. The line's operation has not been contingent upon the operations of any particular industry, and it has been reported to the commission as main line, rather than switching, trackage, it observed. Thus having concluded that the branch in question is within its jurisdiction, the division proceeded to find that its operation could be continued only at a loss, and that abandonment would cause no substantial inconvenience as Inverness is served by another railroad. Approval of the application, however, was subject to the conditions with respect to the protection of any employees adversely affected which were prescribed in the Burlington case, 257 I. C. C. 700, as reported in *Railway Age* of November 18, 1944, page 799.

Financial

BALTIMORE & OHIO.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $4,575,000 of series N 2½ per cent equipment trust certificates, sold at 100.132 to Salomon Brothers & Hutzler and others, in connection with its purchase of five 2-8-8-4 type freight locomotives, 1,000 50-ton hopper cars and 500 50-ton box cars. (Previous item in *Railway Age* of February 17, page 364.)

CHESAPEAKE & OHIO.—*Acquisition.*—In a proposed report, Assistant Director Boles of the Bureau of Finance has recommended that the Interstate Commerce Commission authorize this company to acquire the properties of the Norfolk Terminal & Transportation Company and to assume liability for $500,000 of that company's first mortgage bonds. The C. & O. owns the capital stock of the terminal company, which it has operated under lease. The accompanying application of Alleghany Corporation for authority to acquire control of the terminal company through its control of the C. & O. should be dismissed, the report said, on the ground that Alleghany "is not a proper party to the application." Alleghany's control of C. & O., the report recommended, should be found by the commission to have been acquired in violation of the Interstate Commerce Act.

CHICAGO & EASTERN ILLINOIS.—*Trackage Rights.*—Division 4 of the Interstate Commerce Commission has authorized this company to operate under trackage rights over the property of the Southern Illinois & Missouri Bridge Company from Bridge Junction, Ill., to Illmo, Mo., 4.65 miles, including a bridge crossing the Mississippi river. The C. & E. I. formerly was a co-owner, along with the Missouri Pacific and the St. Louis Southwestern, of the bridge company's stock, but has disposed of its interest to the M. P., so that it became necessary to arrange for trackage rights in order to continue an operation that was begun in 1905.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC-GREAT NORTHERN.—*Joint Operation.*—These roads have applied to the Interstate Commerce Commission for authority to operate jointly one line from Spokane Bridge, Wash., to Coeur d'Alene, Ida., 12.49 miles, instead of two substantially parallel lines. Segments of the existing lines will be linked to secure the most favorable combination, with the result that 6.85 miles of Great Northern and 4.06 miles of Milwaukee trackage will be abandoned.

NEW YORK CENTRAL.—*Annual Report.*—During 1944, total operating revenues of the New York Central amounted to $714,963,385, according to the company's annual report sent to stockholders on March 5. Reviewing the year's results, Gustav Metzman, president, commented as follows: "While gross earnings of the company in the year just ended reached a new high, net earnings were substantially lower than in 1943, due largely to increased wage and material costs. Net income of the company was $35,789,939, or $5.55 per share. Passenger revenues increased 11.7 per cent while freight revenues declined 2.6 per cent. Railway tax accruals, amounting to $98,372,903, were lower than in 1943 by 19.4 per cent, due mainly to smaller income and excess profits taxes. Such accruals equaled $268,778 a day and absorbed approximately 14 cents of every dollar of operating revenues.

"During the year a gross reduction of $49,358,524 was effected in the amount of capital obligations of the company and its lessor companies outstanding in the hands of the public. Partially offsetting this reduction, the company issued and sold $15,500,000 of equipment trust certificates in connection with the acquisition of new equipment. Since 1932 there has been a net reduction of $250,627,664, or 22.6 per cent, in the total amount of such obligations. Interest, computed on an annual basis, on the obligations outstanding at the end of 1944, was $13,608,883 less than on the obligations outstanding at the end of 1932, a reduction of 28.7 per cent.

"Further progress has been made by the research council established by the company in 1942. Surveys and studies affecting practically every phase of the company's business and operations have resulted in the accumulation of much valuable data which will be employed in the improvement of the company's plant and facilities and the development of more efficient operating practices in the post-war era.

"Substantial progress has been made in scientific tests looking to the development of motive power of greater availability and efficiency. An advanced design of high-capacity, coal-fired steam locomotive for high-speed operation or heavy freight duty has been developed and is now nearing completion. Radio as a means of communication has been installed experimentally at several points."

Mr. Metzman expressed the opinion that under a sound national transportation policy the outlook for the future of the railroads is good. The report includes graphs illustrating trends of railway operating revenues and expenses, taxes, fixed charges, capital obligations and interest on capital obligations. It also portrays graphically how the company's income dollar was earned and distributed in 1944.

PENNSYLVANIA.—*Settles Pennroad Suit.*—Litigation instituted by two stockholders of the Pennroad Corporation against the Pennsylvania and nine of its officers and directors to recover upward of $95,000,000 of alleged losses was settled by the two companies for $15,000,000 on March 1, subject to court approval. The net amount to be received by Pennroad will depend on the court's determination of fees and expenses. The suit has been long in litigation.

PERE MARQUETTE.—*Refinancing.*—Approval by Division 4 of the Interstate Commerce Commission has enabled this road to complete its redemption of $52,467,335 of outstanding first mortgage bonds through the use of treasury funds and the proceeds of a new $50,000,000 issue of 3⅜ per cent series D first mortgage bonds, sold at 99.71 to Blyth & Company and others. The net reduction in interest charges is expected to total $12,286,880. (Previous items in *Railway Age* of February 3, page 287, and February 24, page 403.)

SOUTHERN PACIFIC.—*Annual Report.*—In the year ended December, 1944, the Southern Pacific handled the largest volume of traffic in its history. Net ton-miles of freight slightly exceeded those of 1943, establishing a record high for the fifth consecutive year, and were nearly three times those of 1939, the last year before defense production affected rail traffic. Passenger miles were 10.4 per cent greater than in 1943 and were five times those of 1939.

Gross operating revenues also established a new high record. However, expenses, chiefly wages, materials, supplies and taxes, increased to a greater extent than revenues, with the result that the consolidated net income of the properties, $41,847,065 for 1944, was $25,286,122, or 37.7 per cent, less than 1943, and $43,594,329, or 51 per cent less than the peak net income of 1942.

The figures for 1944 follow:

	Year 1944	+ Increase − Decrease	Per Cent.
Freight revenues	$446,402,682.98	+$18,838,561.70	4.41
Passenger revenues	134,419,263.64	+ 10,172,671.39	8.19
Mail and express revenues	19,550,131.89	+ 2,173,554.38	12.51
All other operating revenues	27,851,438.22	− 328,689.97	1.17
Total railway operating revenues	$628,223,516.73	+$30,856,097.50	5.17
Maintenance of way and structures	$84,897,690.59	+ $8,520,323.43	11.16
Maintenance of equipment	105,710,068.11	+ 15,025,075.85	16.57
Traffic expenses	9,270,208.33	+ 1,036,950.82	12.59
Transportation expenses	190,806,184.90	+ 23,999,508.95	14.39
All other operating expenses	30,247,536.48	+ 3,140,268.73	11.58
Total railway operating expenses	$420,931,688.41	+$51,722,127.78	14.01

ST. JOHNSBURY & LAKE CHAMPLAIN.—*Trustee.*—Division 4 of the Interstate Commerce Commission has ratified the appointment of John E. Willis as trustee in this road's reorganization proceedings under section 77 of the Bankruptcy Act.

WESTERN MARYLAND.—*Appeals State Tax Assessment.*—On February 15, this company petitioned the circuit court at Baltimore, Md., to declare that a Maryland statute, under which the state tax commission imposed a gross receipts tax of $324,291 against the company for the year 1943, does not apply to the Western Maryland. In the event that application of the law is declared valid, the company asked the court to rule that the commission's method of computing the tax is improper.

Average Prices Stocks and Bonds

	March 6	Last Week	Last Year
Average price of 20 representative railway stocks..	51.72	50.68	39.88
Average price of 20 representative railway bonds..	95.81	95.47	86.56

Dividends Declared

Beech Creek.—50¢, quarterly, payable April 2 to holders of record March 9.

Chicago, South Shore & South Bend. — 30¢, quarterly, payable March 15 to holders of record March 5.

European & North American.—$2.50, semi-annually, payable April 3 to holders of record March 14.

Maine Central.—prior preferred, $1.50, quarterly, payable April 2 to holders of record March 26.

Pittsburgh, Fort Wayne & Chicago.—common, $1.75, preferred, $1.75, both quarterly, both payable April 2 to holders of record March 10.

Reading.—2nd preferred, 50¢, quarterly, payable April 12 to holders of record March 22.

Southern (M. & O.).—$2.00, semi-annually, payable April 2 to holders of record March 15.

Union Pacific.—common, $1.50, quarterly, 4% preferred, $2.00, semi-annually, both payable April 2 to holders of record March 3.

Railway Officers

Newton, Youngest President

In the announcement of Wayne A. Johnston, as president of the Illinois Central (*Railway Age*, March 3, page 415), Mr. Johnston was referred to as the "youngest president of a major railroad in the United States." This statement is not correct, since Carl E. Newton, president of the Chesapeake & Ohio, is about nine months Mr. Johnston's junior. William White, the Delaware, Lackawanna & Western chief, is just nine months Mr. Johnston's senior.

EXECUTIVE

J. R. Kimpton, assistant manager, department of personnel, of the Canadian Pacific, at Montreal, Que., has been named assistant to the vice-president and general manager at Toronto, Ont., succeeding **S. M. Gossage,** who has been transferred to Montreal replacing Mr. Kimpton, as announced elsewhere in these columns.

Garrett B. Wall, Jr., division engineer of the Chesapeake & Ohio at Clifton Forge, Va., has been appointed assistant to the vice-president in charge of real estate, tax, magazine, and legislative matters, with headquarters at Huntington, W. Va. Mr. Wall, who was born at Richmond, Va., on September 17, 1903, and received his B. S. degree from Princeton University in 1925, entered railroading with the Chesapeake & Ohio in January, 1926, as a draftsman in the office of the chief engineer. In June, 1927, he was appointed assistant engineer, real estate department, transferring to the maintenance of way department at Richmond the following November. He was advanced to assistant division engineer at Ashland, Ky., in October, 1930, and two years later he was promoted to division

Garrett B. Wall, Jr.

engineer at Clifton Forge, Va., the post he held at the time of his recent appointment as assistant to the vice-president at Huntington.

FINANCIAL, LEGAL AND ACCOUNTING

William Leicester has been appointed assistant treasurer of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., succeeding **J. E. Olson,** who has retired after 37 years of service.

Charles D. Phillips, whose promotion to auditor of disbursements of the Spokane, Portland & Seattle, with headquarters at Portland, Ore., was reported in the *Railway Age* of February 17, was born at Garret, Ind., on May 18, 1884, and entered railway service on January 1, 1906, with the mechanical department of the New York, Chicago & St. Louis. From January, 1907, to September, 1919, he held various positions in the engineering and operating departments of the Missouri Pacific, the

Charles D. Phillips

Illinois Central and the Atchison, Topeka & Santa Fe, and in the latter year he went with the S. P. & S., as a special accountant, with headquarters at Portland. In January, 1928, Mr. Phillips was promoted to general accountant, with the same headquarters, and in June, 1933, he was further advanced to division accountant, the position he held at the time of his new appointment.

Ernest E. Fairweather, K. C., head of the law department of the Canadian National at Montreal, Que., whose retirement from service because of ill health was announced in the *Railway Age* of February 24, was born at Apohaqui, N. B., on April 30, 1884. Mr. Fairweather received his B. A. degree from Kings University, in 1905; his M. A. degree from Acadia University, and his LL.B. from Dalhousie Law School in 1911. He was a member of the law firm of Davidson & Fairweather from 1912 to 1915, also serving during that period as assistant solicitor, department of railways and canals, for the Canadian government. Subsequently becoming departmental solicitor, Mr. Fairweather headed the law department (of railways and canals) throughout the period (1915-1923) of acquisition of the various constituent parts of the Canadian National, acting also as solicitor of the Canadian Government Railways (now the Canadian National) from 1915 to 1918. Mr. Fairweather further

Ernest E. Fairweather

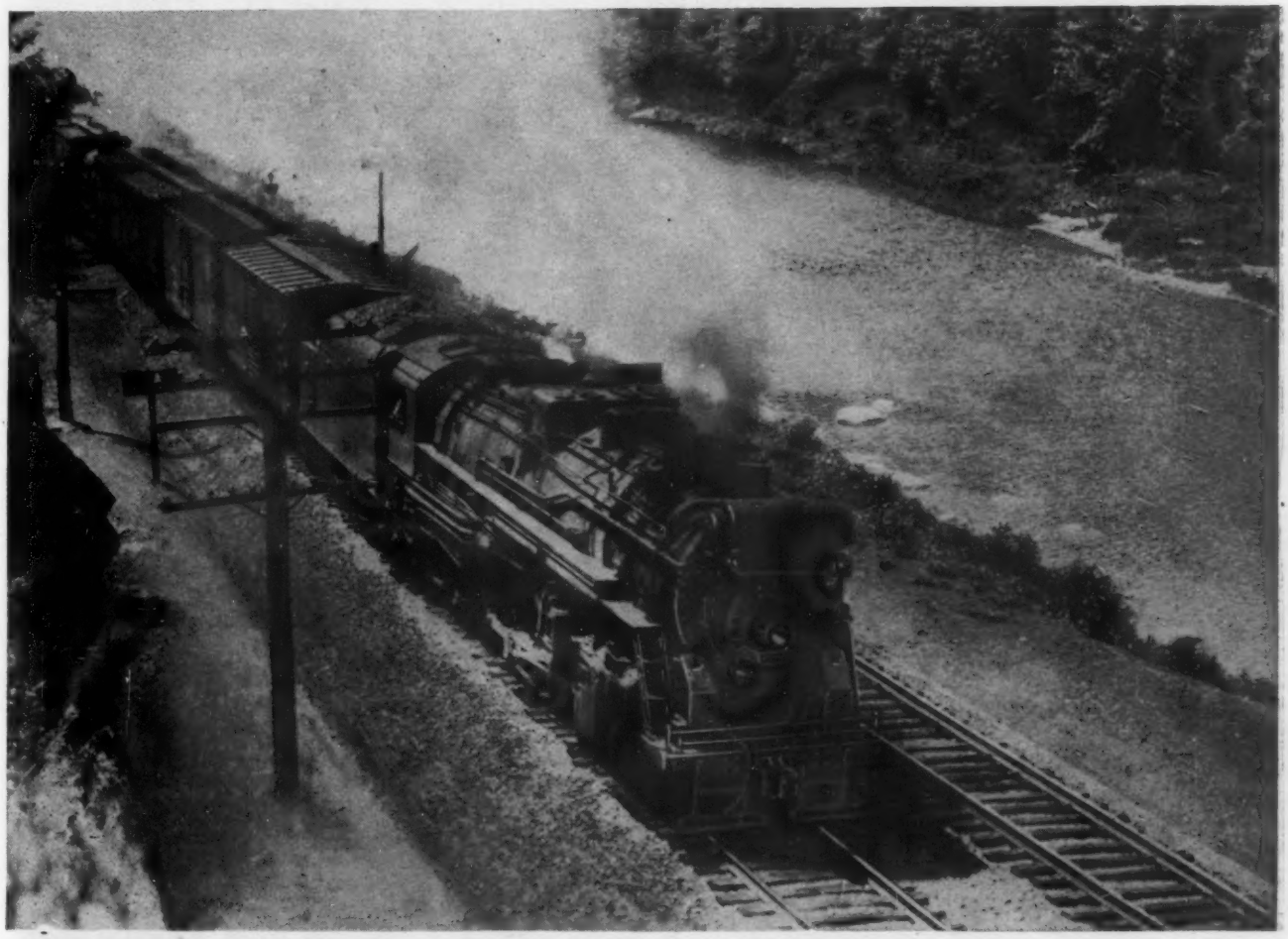
served as counsel, department of railways and canals, from 1917 to 1923, solicitor to the receiver of the Grand Trunk Pacific (now the Canadian National) from 1919 to 1923, and assistant counsel of the Canadian National at Ottawa, Ont., from 1918 to 1921, when he became assistant general counsel there. On February 1, 1923, Mr. Fairweather transferred to Montreal as assistant general counsel of the Canadian National, remaining in that position until December 1, 1928, when he was promoted to counsel. Two years later he was appointed general executive assistant and counsel, becoming acting chief counsel in charge of the legal department in May, 1933. On August 1, 1941, Mr. Fairweather was named chief counsel, the position he held at the time of his recent retirement.

OPERATING

William G. Dorsey, whose appointment as superintendent of transportation of the Delaware, Lackawanna & Western at New York was announced in the *Railway Age* of February 24, was born April

News Department continued on next left-hand page

☆ WAR TIME SERVICE ☆



Proves Value of Modern Power

The railroads are doing a magnificent job of moving traffic with relatively little modern power.

But the outstanding performance of the newer locomotives is convincing evidence that efficient post-war railroading must rest on a sound foundation of up-to-date motive power.

LIMA LOCOMOTIVE WORKS — LIMA LOCOMOTIVE WORKS INCORPORATED — INCORPORATED, LIMA, OHIO

15, 1902, and entered railroad service with the Erie in 1917 as a yard clerk. He served successively thereafter as chief yard clerk, assistant division car distributor, division car distributor, assistant chief car distributor, chief car distributor, and inspector of transportation until 1940, when he joined the staff of the Association of American

William G. Dorsey

Railroads as car service agent, later becoming special assistant to the chairman of the car service division. Mr. Dorsey entered the service of the Delaware, Lackawanna & Western on July 1, 1942, as transportation assistant in the president's office, and was appointed trainmaster at Hoboken, N. J., the following month. In May, 1943, he was transferred to Port Morris, N. J., where he remained until November of the same year, when he was promoted to terminal trainmaster at Hoboken, the position he held at the time of his recent appointment as superintendent of transportation.

K. M. Robertson, assistant to the executive vice-president of the Chesapeake & Ohio at Richmond, Va., has been promoted to superintendent of terminals, with headquarters at Chicago, succeeding **E. H. Taylor,** who has resigned.

Paul R. Gibson, division roadmaster of the Northern Pacific at Minneapolis, Minn., has been promoted to assistant to the general manager, with headquarters at St. Paul, Minn.

W. H. Jones, acting division superintendent of the Atchison, Topeka & Santa Fe at Slaton, Tex., has been promoted to superintendent of the Southern Kansas division, with headquarters at Chanute, Kan., succeeding **L. V. Lienhard,** who has been transferred to the Eastern division, with headquarters at Emporia, Kan., where he replaces **C. D. Notgrass,** who in turn has been granted a leave of absence due to ill health.

J. L. Cooke, whose appointment as assistant general superintendent of transportation of the Seaboard Air Line at Norfolk, Va., was announced in the *Railway Age* of February 3, was born at Scranton, S. C., on June 19, 1905, and joined the Seaboard in November, 1924. After serving as operator, dispatcher, chief dispatcher, trainmaster and assistant superintendent successively, he was appointed superintendent of the Alabama division at Savannah, Ga., the position he held at the time of his recent promotion to assistant general superintendent of transportation.

C. E. Miller, whose appointment as superintendent of the Carolina division of the Seaboard Air Line with headquarters at Savannah, Ga., was announced in the *Railway Age* of February 3, was born at Jupiter, Fla., on December 24, 1894, and entered railroading in January, 1913. Three years later he joined the Seaboard, and he has subsequently served as dispatcher, chief dispatcher, trainmaster, and assistant superintendent successively. He was acting superintendent at Savannah at the time of his recent promotion to superintendent there.

E. D. Glenn, superintendent of the Chesapeake & Ohio's Richmond division at Richmond, Va., has been appointed assistant to the general superintendent, and **R. G. Vawter,** superintendent of the Russell division at Russell, Ky., has been transferred to Richmond succeeding him. **F. W. Myers,** assistant superintendent at Peach Creek, W. Va., has been promoted to superintendent of the Russell division at Russell replacing Mr. Vawter, and **P. L. Koehler,** trainmaster at St. Albans, W. Va., has been advanced to assistant superintendent at Peach Creek to succeed Mr. Myers. **F. S. Harris,** trainmaster at Rainelle, W. Va., has been transferred to St. Albans relieving Mr. Koehler, and **J. N. Wills,** yardmaster at Danville, W. Va., has been named trainmaster at Rainville to succeed Mr. Harris.

H. H. Larson, acting general superintendent of the eastern district of the Union Pacific at Omaha, has been promoted to general manager of the eastern district, with the same headquarters, succeeding **John C. Gale,** who has retired after 40 years of service.

Mr. Larson was born at Harlan, Iowa, and in 1900 he entered railway service as a switchman of the Union Pacific at Omaha, later being transferred to Council

H. H. Larson

Bluffs, Iowa. He subsequently served as assistant yardmaster, yardmaster, general yardmaster and terminal yardmaster, both at Omaha and Council Bluffs until 1934 when he was promoted to special representative of the executive vice-president. In 1937 Mr. Larson was advanced to division superintendent, with headquarters at Los Angeles, Cal., and six years later he was promoted to the position he held at the time of his new appointment.

Mr. Gale was born at Canton, Ill., on February 11, 1880, and entered railway service on July 8, 1905, as a switchman of

John C. Gale

the Union Pacific at Rock Springs, Wyo. He became a watchman and special agent on the Denver & Rio Grande Western on February 5, 1908, but later that year returned to the Union Pacific as a watchman. Mr. Gale subsequently served as a traveling watchman and an assistant special agent, and on July 15, 1916, he was promoted to special agent of the Nebraska division, with headquarters at Omaha. He was advanced to chief special agent at Omaha on March 1, 1917, and in July, 1938, he was promoted to assistant to the president, with the same headquarters, and in February, 1944, he was advanced to the position he held at the time of his retirement.

L. S. Kinnebrew, whose appointment as superintendent, North Florida division, of the Seaboard Air Line at Jacksonville, Fla., was announced in the *Railway Age* of February 24, was born at Elberton, Ga., on October 31, 1890. He entered railroading with the Seaboard as a student clerk and operator at Elberton in October, 1906, and was named dispatcher at Jacksonville on January 1, 1918. After serving successively as assistant chief dispatcher and chief dispatcher there until May, 1937, he was appointed trainmaster at Wildwood, Fla., where he remained for five years, when he was named assistant superintendent of the South Florida division at Tampa, Fla. On March 1, 1943, he transferred to Jacksonville as assistant superintendent of the North Florida division, the position he held at the time of his recent appointment as superintendent.

J. R. Formby, trainmaster of the Southern at Columbia, S. C., has been promoted to manager, stations and transfers, at Chattanooga, Tenn., a newly-created position in which he will supervise package car lines and the handling of less-than-carload freight at stations and transfer points on the Southern. **O. L. Forte,** agent at New Orleans, La., has been named superintendent, stations and transfers; and

News Department continued on next left-hand page

The Franklin System of Steam Distribution has eliminated the restriction on power output imposed by conventional systems of steam distribution.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.
NEW YORK • CHICAGO
In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

L. M. Davis, E. E. Ellison, and **J. R. Legg,** supervisors of station service at Chattanooga, have been appointed supervisors, stations and transfers with the same headquarters. **R. M. Setzer** has been named trainmaster at Columbia succeeding Mr. Formby.

Mr. Formby, who was born at Burnsville, Miss., on August 12, 1899, entered the service of the Southern in July, 1917, as an agent-operator on the Memphis division, later acting as agent at Huntsville, Ala., and Rome, Ga. On October 1, 1924, he was promoted to inspector of agencies of the Memphis division, and he remained in that post until October 6, 1941, when he was appointed agent-yardmaster at Columbus, Ga. He was appointed agent at Macon, Ga., in August, 1943, and the following April he became trainmaster at Columbia, the position he held at the time of his recent promotion to manager, stations and transfers.

Mr. Forte was born on November 22, 1896, at Chestnut, Ala., and joined the Southern as an agent-telegrapher at Satsuma, Ala., on January 15, 1914. After serving in this capacity at various stations, he was promoted to agent yardmaster at Mobile, Ala., on October 1, 1937. On May 12, 1942, he was appointed agent at New Orleans, and he remained at that post until his recent advancement to superintendent, stations and transfers.

TRAFFIC

W. H. Hawes has been appointed general agent of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Detroit, Mich., succeeding **W. A. Carlsen,** who has resigned.

H. A. Lowry, general agent of the Texas & Pacific at Chicago, has been promoted to assistant traffic manager, with the same headquarters, a newly-created position. **C. R. Rasmus,** assistant general agent, has been advanced to general agent, with headquarters as before at Chicago, succeeding Mr. Lowry.

F. E. Lewis, assistant to the freight traffic manager of the New York Central at Cleveland, Ohio, has been appointed assistant freight traffic manager there and has been given jurisdiction over all matters heretofore handled by the freight traffic manager, **J. E. Anderson,** who has been granted a leave of absence.

Charles W. Gowl, assistant general freight agent of the Southern at Birmingham, Ala., has been promoted to assistant freight traffic manager there, and **Earl Brown,** division freight agent at Birmingham, has been named to succeed him. **Harvey H. Peters,** district freight agent at Birmingham, has been advanced to division freight agent replacing Mr. Brown, and **Dewey E. Manderson,** commercial agent at Birmingham, has been appointed district freight and passenger agent with the same headquarters.

H. S. Smith, division freight agent of the Baltimore & Ohio at Dayton, Ohio, has been named district freight agent at Cincinnati, Ohio, succeeding W. M. Randall, whose appointment as general freight agent at New York was announced in the *Railway Age* of March 3. **C. P. Mabie,** division freight agent at Indianapolis, Ind., has been transferred to Dayton to replace Mr. Smith, and **E. H. Gardner,** district freight agent at Indianapolis, has been appointed division freight agent there succeeding Mr. Mabie. **P. K. Groninger** has been named district freight agent at Indianapolis relieving Mr. Gardner.

Walter M. Randall, whose appointment as general freight agent of the Baltimore & Ohio at New York was announced in the *Railway Age* of March 3, was born at Peoria, Ill., on October 6, 1897, and entered railroad service with the Illinois Central as a clerk at Peoria in February, 1916. After holding various clerical positions with the Cleveland, Cincinnati, Chicago & St. Louis (part of the New York Central) and the Chicago, Peoria & St. Louis (now jointly owned by the C. & I. M., C., S. & St. L., I. T., L. & M.) at Springfield, Ill., and Peoria from March, 1917, to July, 1918, Mr. Randall joined the Chicago & Alton (now the Alton) as chief clerk at Peoria, and was named city freight agent there in March, 1920. He became traveling freight

Walter M. Randall

agent in February, 1922, and in June, 1924, he went to Cincinnati, Ohio, as commercial agent. He was appointed general agent at Pittsburgh, Pa., on September 1, 1929, remaining in that post until January 1, 1933, when he joined the Baltimore & Ohio as freight representative at Pittsburgh. He was advanced to district freight agent at Columbus, Ohio, in February, 1935, subsequently transferring to Philadelphia, Pa., in January, 1937, and, in January, 1939, to Cincinnati, where he remained until his recent appointment as general freight agent at New York.

ENGINEERING & SIGNALING

J. Orr has been appointed superintendent of communications of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn.

Charles K. Bruce, whose promotion to bridge engineer of the Louisville & Nashville, with headquarters at Louisville, Ky., was reported in the *Railway Age* of February 17, was born at Lincoln, Neb., on February 14, 1888, and graduated from Vanderbilt University in 1912. In November of the same year he entered railway service as a clerk of the Nashville Terminals, with headquarters at Nashville, Tenn., later serving as a draftsman in the chief engineer's office. In 1914 he went with the Nashville, Chattanooga & St. Louis as water supply engineer, with headquarters

Charles K. Bruce

at Nashville. In November, 1916, Mr. Bruce returned to the L. & N., as a draftsman of the bridge department at Louisville, and in 1919 he was promoted to assistant engineer of the bridge department with the same headquarters. In October, 1943, he was advanced to associate bridge engineer, with the same headquarters, the position he held at the time of his new appointment.

J. P. Hiltz, Jr., supervisor of track of the Long Island at Jamaica, N. Y., has been appointed engineer of track of the Delaware, Lackawanna & Western with headquarters at Scranton, Pa., effective March 16.

Harold J. Bogardus, whose promotion to assistant chief engineer of the Pere Marquette was announced in the *Railway Age* of March 3, was born at Grand Rapids, Mich., on September 23, 1892, and was graduated from the University of Michigan in 1915. He entered railway service in

Harold J. Bogardus

1916 with the Pere Marquette as an extra-gang timekeeper, subsequently serving as transitman, later being promoted to assistant division engineer in 1919. Mr. Bogardus was advanced to division engineer in

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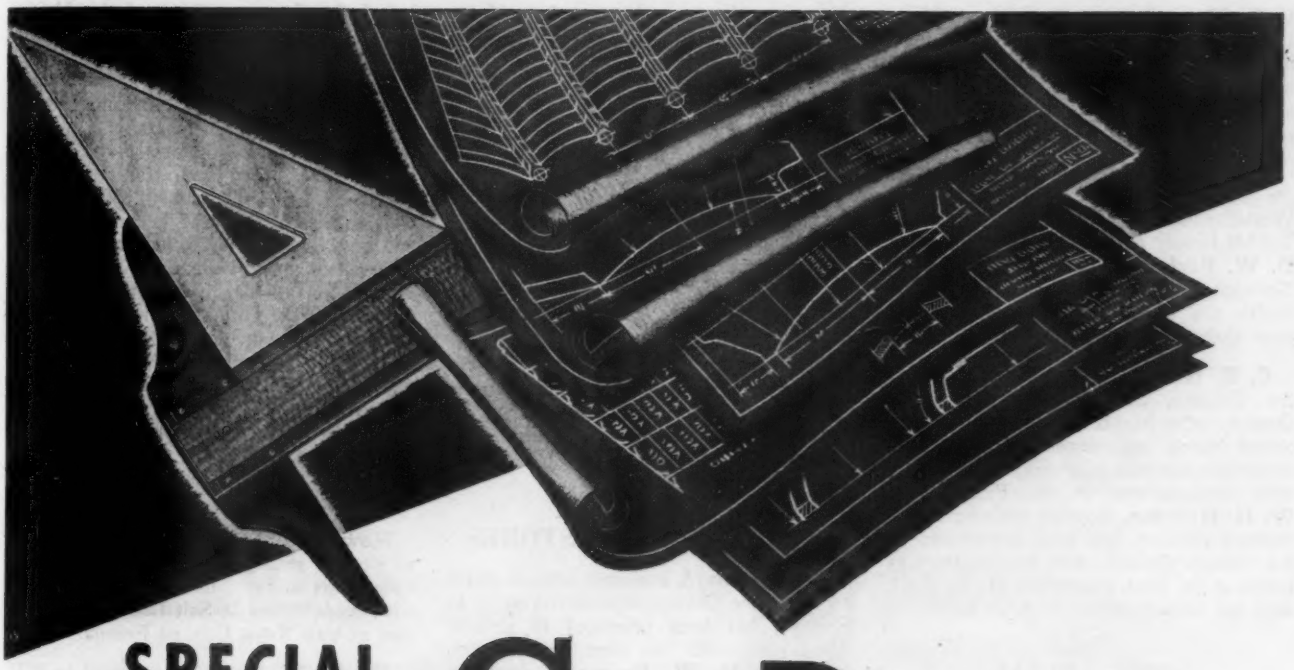
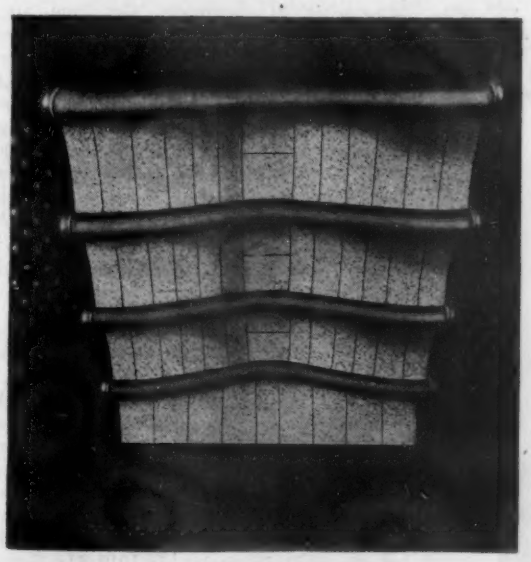


SPECIAL BRICK SHAPES WOULD BE A NUISANCE TODAY



The initial standardization of Arch Brick shapes and sizes and Arch tube spacings was the work of the American Arch Company.

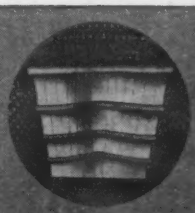
It is a work that goes forward constantly and saves the Stores and Mechanical Departments a vast amount of trouble.

The easiest solution to meet a locomotive arch difficulty is to call for a special brick shape. This the American Arch Company is willing to do only as a last resort. Over 50% of all Arch Brick is covered by 6 separate patterns.

The insistence of American Arch Company on adhering to standards has simplified the work of the Storekeeper and Maintenance Man. It is of particular significance in these war days.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.

INCORPORATED

60 EAST 42nd STREET, NEW YORK, N. Y.

Locomotive Combustion Specialists

1926 with headquarters at Saginaw, Mich. He was promoted in 1944 to assistant engineer maintenance of way with the same headquarters and remained in that position until his new appointment, effective February 15.

F. L. Cagwin, district engineer, Scranton district, of the New York, Ontario & Western, has retired because of ill health, and his former position has been abolished. **D. W. Fagley, Jr.,** assistant engineer at Norwich, N. Y., has retired because of ill health, and the position of assistant engineer there has been abolished.

C. E. Hise, assistant chief engineer of the Chicago, St. Paul, Minneapolis & Omaha, who has been serving with the armed forces, has returned to the Omaha as division engineer of the Eastern division, with headquarters at St. Paul, Minn. **W. H. Huffman,** division engineer of the Eastern division, has been transferred to the western division, with headquarters as before at St. Paul, succeeding **H. H. Hall,** who has been assigned to other duties.

MECHANICAL

Samuel B. Schenck, whose appointment as engineer, motive power, of the Bessemer & Lake Erie at Greenville, Pa., was announced in the *Railway Age* of February 24, was born at Howard, Pa., on May 11, 1891. In 1913 he joined the railway engineering department of Westinghouse Electric & Manufacturing Co., doing electric traction work, and he later became a general railway engineer specializing in gasoline and Diesel-electric locomotives and rail cars. During the first world war he served

Samuel B. Schenck

as a second lieutenant of engineers in the office of the director-general of military railways at Washington, D. C. Mr. Schenck entered the service of the Bessemer & Lake Erie in 1934 as special engineer in the mechanical department, working with Diesel locomotives, train communication and on special assignments. He was appointed assistant engineer of motive power on March 1, 1944, and remained in that post until his recent appointment as engineer of motive power.

J. R. Frohoff, whose promotion to superintendent of motive power and machinery, northwestern district, of the Union Pacific, with headquarters at Albina, Ore., was reported in the *Railway Age* of February 10, entered railway service with the U. P., in August, 1924, as a machinist at Junction City, Kan., and in 1928 he was promoted to enginehouse foreman, with the same headquarters. Later he served as general locomotive foreman, mechanical foreman, machine foreman and district foreman at various points of the road until August, 1938, when he was advanced to master mechanic with headquarters at Kansas City, Mo. In April, 1940, Mr. Frohoff was promoted to assistant to the superintendent of motive power and machinery at Omaha, Neb., and in August of the same year he was appointed master mechanic of the Colorado division, with headquarters at Denver, Colo., the position he held at the time of his new promotion.

PURCHASES AND STORES

E. J. Leonard, assistant general storekeeper of the Chicago & North Western at Chicago, has been promoted to general storekeeper, with the same headquarters, succeeding **D. W. Corcoran,** who has retired after 40 years of service.

SPECIAL

S. M. Gossage, assistant to the vice-president and general manager of the Canadian Pacific at Toronto, Ont., has been appointed assistant manager, department of personnel, at Montreal, Que., succeeding **J. R. Kimpton,** who has been transferred to Toronto as assistant to the vice-president and general manager.

OBITUARY

Carleton S. Hadley, general counsel of the Wabash, whose death on February 16 was reported in the *Railway Age* of March 3, was born at Lowell, Mass., on

Carleton S. Hadley

December 24, 1902, and was graduated from Washington University, St. Louis, Mo., in 1925 and Washington University Law School in 1928. During summers while attending the university, he worked in several departments of the Missouri Pacific. After receiving his law degree, he was admitted to the bar in the state of Missouri, and in 1935 he was admitted to practice before the Supreme Court of the United States. In August, 1928, he became associated with the law firm of Carter, Jones & Turney at St. Louis, and was appointed assistant attorney for the St. Louis Southwestern, by the firm members, who were at that time general solicitors of the Cotton Belt. In 1933, when the Cotton Belt organized its own law department, Mr. Hadley was appointed assistant general attorney and on January 1, 1936, he was promoted to assistant general solicitor. At the same time, following the filing of a reorganization plan by the Cotton Belt in 1935, he was appointed assistant general counsel for the trustee. On September 1, 1939, Mr. Hadley went with the Terminal Railroad Association of St. Louis as general counsel and two years later he was elected vice-president and general counsel. In October, 1942, he went with the Wabash in the position he held at the time of his death.

Howard V. Platt, who retired in 1928 as general manager of the Oregon Short Line (part of the Union Pacific System), with headquarters at Salt Lake City, Utah, died at Van Nuys, Cal., on February 27.

Eugene W. Clapp, who retired in 1933 as general passenger traffic manager of the Southern Pacific, with headquarters at San Francisco, Cal., died at his home in Atherton, Cal., on March 1.

Gordon L. Hurley, superintendent of the North Florida division of the Seaboard Air Line at Jacksonville, Fla., whose death on February 9 was reported in the *Railway Age* of February 24, was born at Lumpkin, Ga., on October 7, 1878, and entered railroading in 1894 as a dispatcher of the Georgia & Alabama (now the Seaboard). He joined the Seaboard in 1900 as train dispatcher at Savannah, Ga., and after serving successively as chief dispatcher, assistant trainmaster, and trainmaster there, he went with the Macon, Dublin & Savannah in 1914 as trainmaster at Macon, Ga., where he later was named superintendent. He re-entered the service of the Seaboard on December 1, 1918, as superintendent at Savannah, remaining there until August, 1920, when he was appointed superintendent of the North Florida division, the position he held at the time of his death.

Frank W. Grace, vice-president and general manager of the Missouri-Kansas-Texas, with headquarters at Dallas, Tex., died in a hospital in that city on March 1. Mr. Grace was born at Denison, Tex., on February 10, 1880, and 14 years later he obtained his first railroad experience as a call boy. For the following 25 years he served successively in that position, and as station helper, seal clerk, brakeman, yardmaster and trainmaster. In 1919, Mr. Grace was promoted to division superintendent at Wichita Falls, Tex., where he remained until 1923, when he was transferred to Muskogee, Okla. He was advanced to general superintendent of the Katy, with headquarters at Denison, on February 1, 1927, and on July 1, 1930, he was promoted to general manager, with headquarters at Dallas. In July, 1931, he was elected a vice-president, retaining his position of general manager, and holding both titles up to the time of his death.

Table of Revenues and Expenses appears on next left-hand page

An *Important Feature* of the *American* Multiple-valve Throttle

A SERVICE LIFE that is both

L-O-N-G and DEPENDABLE

Location, design and dependability are essential for good locomotive operation.

The American multiple-valve throttle has this combination.

LOCATION – In superheater header, close to cylinders for better acceleration and control.

DESIGN – Small multiple valves, steel construction, properly balanced for better control.

DEPENDABILITY—Design provides simplicity with valves opening in sequence that result in ease of operation.

Front end of locomotive, showing American multiple-valve throttle in place — when the superheater header is bolted in place . . . the throttle is automatically installed.

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JANUARY OF CALENDAR YEAR 1945

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1945	1944
Akron, Canton & Youngstown	Jan.	171	$421,495	$219	$437,268	$69,190	$38,586	$18,927	$133,678	$281,258	64.3	$156,010	$62,488	$76,914	$79,555
Alton	Jan.	959	1,848,864	646,910	2,792,550	301,241	476,227	67,371	1,088,471	2,072,988	74.2	719,562	328,528	211,640	420,483
Atchison, Topeka & Santa Fe System	Jan.	13,115	33,136,037	8,961,680	44,958,962	5,428,347	7,358,121	577,995	12,346,812	26,373,101	58.7	18,585,861	13,459,021	4,828,082	3,974,760
Atlanta & West Point	Jan.	93	323,735	122,542	489,679	49,161	59,716	10,442	186,766	325,445	66.5	164,234	102,453	31,343	31,734
Western of Alabama	Jan.	133	301,115	135,569	474,379	55,722	65,767	10,674	165,017	314,690	66.3	159,689	108,070	42,045	48,130
Atlanta, Birmingham & Coast	Jan.	639	594,269	51,473	670,340	107,402	127,828	29,907	259,838	547,377	81.66	122,963	60,250	31,135	29,456
Atlantic Coast Line	Jan.	4,935	9,378,075	3,737,848	13,938,748	1,638,933	2,312,885	204,287	4,139,070	8,712,646	62.5	5,226,102	3,700,000	956,127	1,339,260
Charleston & Western Carolina	Jan.	343	348,152	12,719	369,074	50,912	63,288	10,159	125,758	256,243	69.4	112,831	65,000	45,169	48,257
Baltimore & Ohio	Jan.	6,135	24,324,788	4,393,328	30,420,943	3,470,516	6,649,643	424,639	11,113,437	22,791,792	74.9	7,629,151	3,711,629	3,419,518	3,113,980
Staten Island Rapid Transit	Jan.	29	335,535	136,099	478,385	54,776	63,654	1,331	178,061	326,115	68.2	152,270	53,494	67,857	109,319
Bangor & Aroostook	Jan.	602	1,014,449	65,966	1,114,640	189,232	130,141	7,134	310,410	673,256	60.4	441,384	299,482	136,150	174,599
Bessemer & Lake Erie	Jan.	214	736,490	3,350	752,876	128,926	709,824	12,924	278,920	1,173,912	155.9	—421,036	52,366	—236,106	—60,126
Boston & Maine	Jan.	1,789	4,607,025	1,466,879	6,671,773	1,221,986	1,392,334	88,188	2,803,327	5,756,822	86.3	914,951	488,303	142,759	463,867
Burlington, Rock Island	Jan.	228	157,273	67,696	241,908	28,636	21,884	4,386	88,085	158,237	65.4	83,671	9,985	40,154	24,651
Cambria & Indiana	Jan.	35	124,974	.....	125,036	8,490	47,074	774	18,476	82,561	66.0	42,475	78,547	47,862	73,704
Canadian Pacific Lines in Maine	Jan.	234	524,086	109,971	663,806	105,746	70,805	6,668	191,306	384,714	58.0	279,092	22,463	167,310	287,644
Canadian Pacific Lines in Vermont	Jan.	90	67,246	21,470	100,923	36,689	29,951	2,419	98,844	171,849	170.3	—70,926	9,927	—125,331	—86,675
Central of Georgia	Jan.	1,815	2,352,171	767,617	3,419,598	441,597	613,547	75,957	1,268,245	2,539,217	74.2	880,381	284,506	512,013	547,446
Central of New Jersey	Jan.	654	3,678,901	591,711	4,595,582	498,049	963,477	57,002	2,111,338	3,801,662	82.7	793,920	438,203	134,993	132,042
Central Vermont	Jan.	422	453,556	73,000	571,314	102,838	128,193	9,638	324,628	600,458	105.1	—29,144	47,217	—121,676	106,142
Chesapeake & Ohio	Jan.	3,076	14,927,741	1,350,096	16,792,807	2,174,396	3,795,377	257,838	5,009,452	11,775,027	70.1	5,017,780	3,073,725	2,515,962	2,809,746
Chicago & Eastern Illinois	Jan.	912	1,790,818	571,850	2,606,446	341,729	474,176	71,534	1,001,361	2,000,374	76.7	606,072	206,000	202,952	216,862
Chicago & Illinois Midland	Jan.	131	517,853	1,329	540,931	62,869	92,462	27,905	154,692	366,349	67.7	174,582	105,152	70,681	67,948
Chicago & North Western	Jan.	8,072	8,707,480	2,899,089	13,105,709	1,777,120	2,634,207	222,831	4,968,925	10,125,238	77.3	2,980,471	1,453,340	1,526,526	2,108,145
Chicago, Burlington & Quincy	Jan.	8,987	16,190,000	3,436,133	21,313,959	2,292,657	2,919,682	258,284	5,132,363	11,165,260	52.4	10,148,699	6,074,921	3,699,712	2,533,651
Chicago Great Western	Jan.	1,500	2,106,530	209,383	2,518,659	371,938	341,848	68,513	1,004,258	1,862,675	74.0	655,984	256,483	236,563	275,594
Chicago, Indianapolis & Louisville	Jan.	541	970,839	96,667	1,144,628	112,726	190,872	33,509	381,167	758,808	66.3	385,820	100,462	227,647	222,886
Chicago, Milwaukee, St. Paul & Pacific	Jan.	10,722	15,246,341	2,428,475	19,325,826	2,350,160	3,214,624	277,807	6,701,870	13,266,096	68.6	6,059,730	3,255,000	2,538,535	2,940,138
Chicago, Rock Island & Pacific	Jan.	7,749	11,730,006	3,327,676	16,258,560	1,822,958	2,323,096	346,939	4,837,239	9,948,104	61.2	6,310,456	3,529,136	2,322,122	2,102,142
Chicago, St. Paul, Minneapolis & Omaha	Jan.	1,617	1,636,263	333,271	2,155,922	302,580	325,612	41,158	974,524	1,723,754	80.0	432,168	147,731	213,711	312,445
Clinchfield	Jan.	302	1,247,391	10,235	1,266,682	88,756	199,684	21,804	294,499	625,504	49.4	641,178	132,785	536,058	579,962
Colorado & Southern	Jan.	748	835,520	273,668	1,212,691	189,990	196,085	16,835	401,177	852,893	70.3	359,798	143,057	176,379	229,340
Fort Worth & Denver City	Jan.	804	672,404	402,767	1,191,252	338,042	185,521	26,323	332,171	942,227	79.1	249,025	117,001	116,115	269,505
Colorado & Wyoming	Jan.	42	87,775	.....	147,137	10,024	18,714	675	55,428	89,357	60.7	57,780	28,852	28,748	23,149
Columbus & Greenville	Jan.	168	154,638	10,058	173,515	38,117	19,154	4,193	52,344	127,594	73.5	45,921	25,649	21,182	10,975
Delaware & Hudson	Jan.	846	3,663,598	171,196	3,922,973	504,773	1,113,092	46,874	1,487,411	3,276,691	83.5	646,282	329,854	309,597	1,163,951
Delaware, Lackawanna & Western	Jan.	973	4,148,748	887,819	5,618,774	778,371	1,070,454	109,917	2,936,323	5,089,318	90.6	529,456	525,000	—156,543	569,932
Denver & Rio Grande Western	Jan.	2,386	4,588,686	635,323	5,458,039	635,826	1,183,227	102,265	1,747,493	3,865,303	70.8	1,592,736	513,899	1,012,664	1,105,019
Denver & Salt Lake	Jan.	232	250,491	9,445	269,947	40,697	54,152	3,454	90,334	200,816	74.4	69,131	30,723	91,217	112,076
Detroit & Mackinac	Jan.	230	57,454	11,667	77,206	13,735	18,246	845	33,354	70,451	91.3	6,755	4,369	584	2,372
Detroit & Toledo Shore Line	Jan.	50	409,111	.....	410,352	31,155	26,840	9,874	108,377	185,718	45.3	224,634	104,095	62,865	66,114
Detroit, Toledo & Ironton	Jan.	464	880,238	1,297	908,132	87,897	123,107	15,426	231,116	484,135	53.3	423,997	190,383	233,001	274,381
Duluth, Missabe & Iron Range	Jan.	546	102,950	4,858	138,158	259,224	553,659	4,671	267,662	1,131,932	819.3	—993,774	61,148	—1,043,961	—1,018,850
Duluth, Winnipeg & Pacific	Jan.	175	214,000	2,200	221,000	31,720	30,662	2,386	99,725	168,938	76.4	52,062	17,777	2,560	18,598
Elgin, Joliet & Eastern	Jan.	392	2,792,612	83	3,174,314	233,879	770,676	17,518	1,105,519	2,194,806	69.1	979,508	461,289	469,401	284,261

(Continued on second left hand page)

Your Obedient Servant

THE whole world has heard tales about this Paul Bunyan of modern locomotives. Its name is "Big Boy" and it's the biggest freight locomotive ever built. It hauls a hundred and more cars over the steepest grades on the Union Pacific route. Most folks will never ride behind it, but in the story of "Big Boy" is a moral that affects everybody who lives in this country.

You see, the railroad fares people pay, the cost of food, the dividends people get from railroad stocks—all depend a lot on the operating efficiency of the railroads.

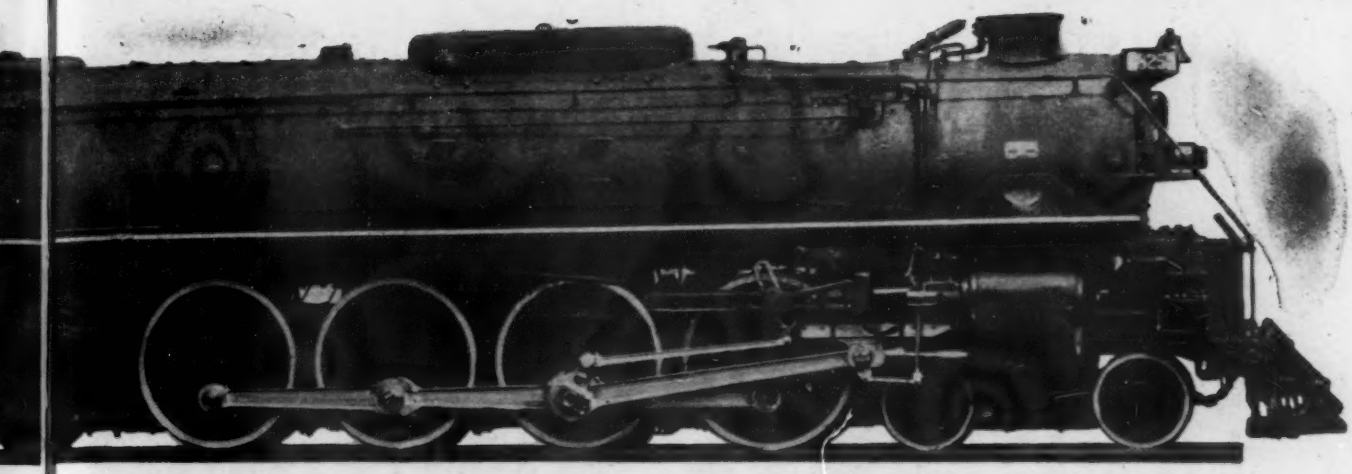
If a local commuting train were pulled by "Big Boy", people would enjoy a swift, safe ride – but they'd hardly enjoy the low fares that they do now.

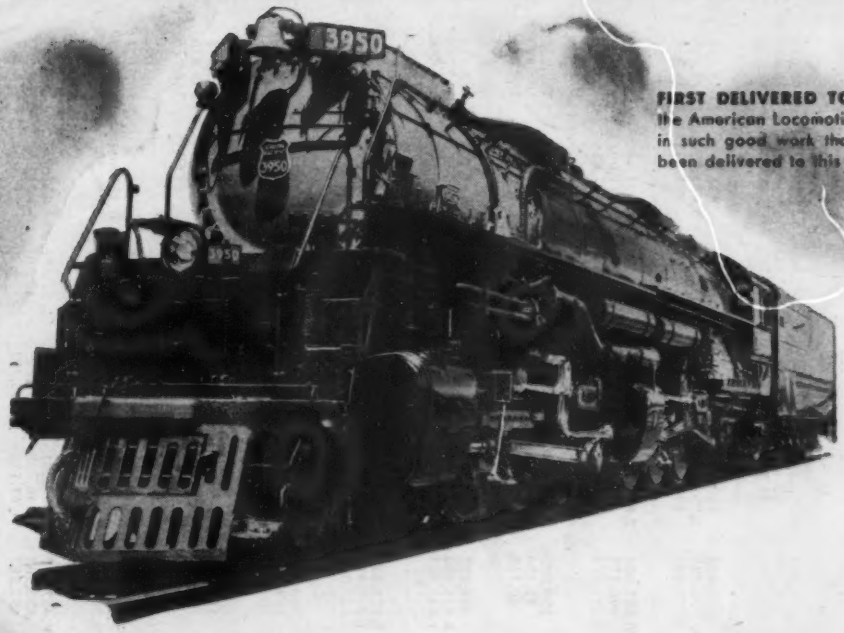
On the other hand, if the engine that powers that local commuting train were put to work at "Big Boy's" particular stint, too many additional engines would be required to do the job.

The moral is simple: the modern locomotive is the one best fitted to the job. It may be steam, Diesel-electric or electric. Economy of performance is the deciding factor. At American Locomotive, we build all three. Like "Big Boy", and the other two U.P. engines shown on the next page, each is unsurpassed for its job because each is built for its job.

ANOTHER ENGINE MAKING GOOD on the Union Pacific is the 4-8-4 type steam locomotive built by American Locomotive in 1937. The 20 that were first installed that year proved so successful that an additional order for 15 more was delivered to the U.P. in 1939, followed by 10 more in 1944.

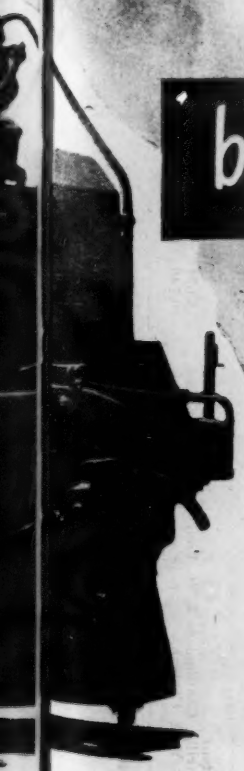
Each is unsurpassed for the job





FIRST DELIVERED TO THE U. P. in 1936, the American Locomotive-built 4-6-6-4 turned in such good work that a total of 99 have been delivered to this road to date.

because each was built for the job!



"BIG BOY", the world's largest and most powerful steam engine, was built by American Locomotive for the Union Pacific. It is designed to haul maximum tonnage and maintain schedules without helper service on a ruling grade of 1.14% over the Wasatch Mountains. "Big Boy" produces maximum power output continuously at 70 m.p.h., has a top speed of 80 m.p.h.

American Locomotive

NEW YORK

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JANUARY OF CALENDAR YEAR 1945

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1945	1944
Erie	Jan.	2,243	10,141,141	973,141	11,861,218	1,215,120	2,334,596	237,281	5,218,585	9,455,717	79.7	2,405,501	1,058,250	804,644	1,234,459
Florida East Coast	Jan.	682	1,575,121	1,162,574	3,001,459	348,240	326,636	54,276	857,540	1,725,933	57.5	1,275,526	406,375	773,309	916,993
Georgia Railroad	Jan.	329	718,536	145,700	906,654	95,388	142,411	22,390	344,457	627,231	69.2	279,423	33,646	230,617	221,309
Georgia & Florida	Jan.	408	188,970	5,707	198,830	52,230	28,053	10,565	68,548	166,956	84.0	31,874	11,019	11,278	32,281
Grand Trunk Western	Jan.	1,026	2,545,000	328,000	3,051,000	467,816	533,225	36,973	1,208,870	2,358,833	77.3	692,167	219,147	446,601	490,837
Canadian National Lines in New England	Jan.	172	110,900	10,200	151,600	43,460	29,280	2,238	105,646	204,296	134.8	—52,696	21,189	—102,480	—93,663
Great Northern	Jan.	8,371	11,938,510	1,425,430	14,392,680	2,397,108	3,210,741	249,049	4,552,735	10,897,014	75.7	3,495,666	2,154,246	1,337,350	1,306,647
Green Bay & Western	Jan.	233	230,824	488	238,358	50,447	21,185	7,816	73,953	172,406	72.3	65,952	32,084	29,074	40,989
Gulf & Ship Island	Jan.	259	179,750	32,558	236,378	48,359	27,191	2,782	96,665	185,260	78.4	51,118	18,981	18,030	—25,261
Gulf, Mobile & Ohio	Jan.	1,950	2,703,184	181,963	2,972,622	480,766	523,821	82,540	841,313	2,055,414	69.1	917,208	508,821	312,953	347,806
Illinois Central	Jan.	4,823	14,204,533	2,711,052	17,975,035	2,299,480	3,262,821	219,490	5,431,896	11,875,655	66.1	6,099,380	3,920,498	2,125,411	2,124,493
Yazoo & Mississippi Valley	Jan.	1,524	2,159,309	406,208	2,705,968	508,104	301,702	37,825	895,793	1,839,180	68.0	866,788	456,267	328,542	301,477
Illinois Central System	Jan.	6,347	16,363,842	3,117,260	20,681,003	2,807,584	3,564,523	257,315	6,327,689	13,714,835	66.3	6,966,168	4,381,917	2,458,866	2,426,883
Illinois Terminal	Jan.	476	745,676	168,777	990,175	98,475	117,765	21,072	311,001	574,420	58.01	415,755	275,665	119,595	138,729
Kansas City Southern	Jan.	890	2,751,071	298,404	3,245,474	420,580	516,904	65,320	897,386	2,028,573	62.5	1,216,901	475,000	547,265	318,224
Kansas, Oklahoma & Gulf	Jan.	328	344,339	1,692	350,002	38,603	28,032	10,028	80,908	168,233	48.1	181,769	81,580	76,860	77,629
Lake Superior & Ishpeming	Jan.	156	37,878	115	41,476	27,755	39,948	746	30,627	106,990	257.96	—65,514	23,557	—81,218	—89,293
Lehigh & Hudson River	Jan.	96	239,860	13	240,548	25,580	39,824	5,524	90,842	168,928	70.2	71,620	32,340	16,794	25,868
Lehigh & New England	Jan.	190	402,015	.....	404,772	44,634	119,891	7,591	151,164	345,139	85.3	59,633	33,020	39,636	90,688
Lehigh Valley	Jan.	1,260	5,314,733	624,148	6,453,214	913,492	1,359,449	121,036	3,180,027	5,812,765	90.1	640,449	476,694	—276,810	679,558
Louisiana & Arkansas	Jan.	834	1,544,173	141,865	1,742,985	287,209	191,756	35,200	388,149	958,066	55.0	784,919	505,290	220,653	214,623
Louisville & Nashville	Jan.	4,756	13,808,720	3,446,385	18,372,427	1,917,191	3,089,393	201,335	5,665,100	11,457,712	62.4	6,914,715	5,057,852	2,168,729	2,035,681
Maine Central	Jan.	988	1,361,611	203,454	1,668,418	329,807	330,957	14,060	668,652	1,394,607	83.6	273,811	132,076	83,994	133,397
Midland Valley	Jan.	334	140,106	38	143,044	19,717	14,678	2,673	45,565	87,374	61.1	55,670	27,957	18,919	26,281
Minneapolis & St. Louis	Jan.	1,408	1,171,259	30,146	1,252,122	209,360	194,542	67,414	427,070	958,835	76.6	293,287	160,868	132,277	193,866
Minneapolis, St. Paul & Sault Ste. Marie	Jan.	3,224	1,475,618	150,021	1,777,549	308,271	442,745	38,664	858,257	1,713,448	96.4	64,101	136,686	—45,931	445,169
Duluth, South Shore & Atlantic	Jan.	550	264,112	21,671	304,943	52,586	63,041	10,961	143,247	278,105	91.2	26,838	21,282	4,511	49,683
Spokane International	Jan.	152	163,041	4,806	181,565	44,361	13,903	3,315	44,091	112,851	62.2	68,714	35,561	23,590	16,177
Mississippi Central	Jan.	158	153,967	2,028	160,146	29,960	18,928	9,155	40,254	105,030	65.6	55,116	19,431	25,508	23,867
Missouri & Arkansas	Jan.	365	210,064	2,602	226,333	61,854	18,358	8,258	89,638	184,776	81.6	41,557	11,991	4,263	7,759
Missouri-Illinois	Jan.	172	259,708	576	261,381	41,583	39,311	4,619	68,726	161,621	61.8	99,760	65,066	34,599	36,213
Missouri-Kansas-Texas Lines	Jan.	3,253	5,657,090	999,265	7,217,952	1,535,698	895,754	140,543	2,131,664	4,932,902	68.3	2,285,050	1,224,109	660,683	783,324
Missouri Pacific	Jan.	7,082	14,641,369	3,397,272	19,396,128	1,923,897	2,729,041	308,192	5,538,227	11,077,564	57.1	8,318,564	4,698,419	3,007,428	2,956,472
Gulf Coast Lines	Jan.	1,734	3,968,290	324,380	4,457,177	655,201	361,048	57,488	1,022,500	2,189,735	49.1	2,267,442	.....	657,144	622,175
International Great Northern	Jan.	1,110	1,785,399	465,153	2,495,963	446,769	354,739	37,507	833,765	1,768,599	70.9	727,364	268,687	317,545	301,796
Monongahela	Jan.	170	485,178	2,529	492,287	61,113	40,793	630	151,934	258,661	52.5	233,626	92,375	65,522	126,337
Montour	Jan.	51	202,733	.....	202,876	13,281	55,054	1,055	77,682	156,614	77.2	46,262	41,780	40,089	49,175
Nashville, Chattanooga & St. Louis	Jan.	1,071	2,607,634	515,584	3,371,309	519,620	693,438	85,870	1,112,581	2,501,183	74.2	870,126	404,017	464,413	469,247
New York Central	Jan.	10,749	34,819,308	13,480,119	53,446,676	8,183,138	10,931,312	739,275	22,267,754	44,478,953	83.2	8,967,723	4,431,462	2,465,281	4,885,346
Pittsburgh & Lake Erie	Jan.	229	2,280,564	115,152	2,497,116	316,275	919,041	41,886	988,648	2,379,819	95.3	117,297	313,851	256,154	408,358
New York, Chicago & St. Louis	Jan.	1,687	7,333,768	336,022	7,825,545	996,011	1,334,612	152,822	2,615,828	5,308,822	75.2	3,443,593	1,220,000	1,153,664	1,743,514
New York, New Haven & Hartford	Jan.	1,838	7,014,076	5,733,574	13,887,766	1,736,646	2,336,359	137,193	5,448,751	10,444,173	67.8	2,516,723	767,845	1,336,656	874,454

Turn to next left-hand page

Regulating the Brake To Rail-Wheel Adhesion

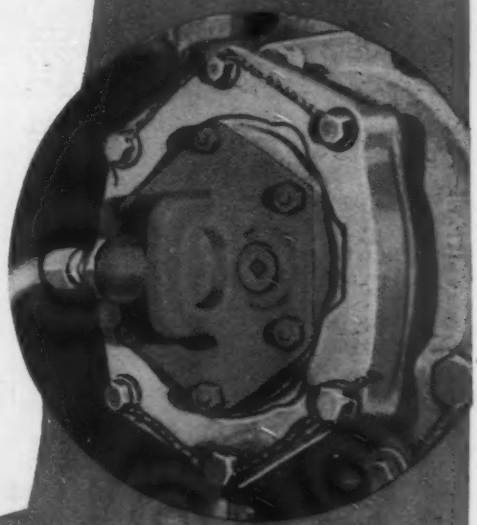
with

"AP" Decelostat

The Decelostat is activated at the mere threat of wheel slide when brakes are applied. The brake is *softened* by easing up on it for the moment. Safety is served in two respects:

1. Over-all train retardation is sustained as compared with the loss in retarding effort if wheels actually slide.

2. The Decelostat works with the engineman, helping to regulate the braking effort to the value permitted by the wheel-rail adhesion.



Softens the Brake
When Wheel Slip Impends

WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JANUARY OF CALENDAR YEAR 1945

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income: 1945	1944
New York Connecting	Jan.	21	191,296	.....	210,268	50,003	11,319	.....	48,569	111,553	53.1	98,715	95,882	161,944	161,139
New York, Ontario & Western	Jan.	550	482,902	3,352	545,805	94,823	148,018	22,312	431,760	725,396	132.9	—179,591	42,527	—275,361	—25,930
New York, Susquehanna & Western	Jan.	120	318,163	40,840	369,136	34,609	35,078	5,264	169,492	259,672	70.3	109,464	47,178	13,038	73,811
Norfolk & Western	Jan.	2,154	12,164,511	1,233,127	13,901,889	1,482,222	2,601,555	172,610	3,176,009	7,775,712	55.9	6,126,177	4,737,348	2,085,442	2,068,968
Norfolk Southern	Jan.	727	595,451	23,919	640,959	147,317	82,598	30,212	247,085	536,594	83.7	104,365	35,882	39,793	35,422
Northern Pacific	Jan.	6,867	9,481,941	1,484,020	11,973,775	1,641,490	2,623,409	182,739	3,937,664	8,945,584	74.7	3,028,191	1,729,613	1,659,079	1,569,576
Northwestern Pacific	Jan.	331	507,870	17,623	547,908	158,875	58,596	3,001	181,208	416,251	76.0	131,657	25,531	90,576	—14,280
Oklahoma City-Ada-Atoka	Jan.	132	124,774	.....	125,865	18,693	6,421	1,212	29,227	59,688	47.4	66,177	27,509	23,594	29,576
Pennsylvania	Jan.	10,115	48,354,936	21,709,625	76,283,661	9,859,152	15,059,575	1,003,084	34,600,234	63,549,616	83.3	12,734,045	8,767,074	3,372,873	7,730,860
Long Island	Jan.	376	1,070,610	2,040,645	3,286,091	548,326	517,805	10,001	1,669,820	2,820,508	85.8	465,583	241,583	—23,043	—72,582
Pennsylvania-Reading Seashore Lines	Jan.	392	402,420	270,343	696,673	152,357	115,321	7,181	472,784	772,162	110.8	—75,489	83,161	—254,673	—224,002
Pere Marquette	Jan.	1,949	3,992,315	284,175	4,438,150	743,629	879,636	78,509	1,697,493	3,567,950	80.4	870,200	385,871	419,398	309,996
Pittsburg & Shawmut	Jan.	97	115,589	.....	116,358	17,379	22,647	1,602	38,897	86,092	74.0	30,266	9,983	21,357	23,245
Pittsburgh & West Virginia	Jan.	136	609,741	.....	629,595	79,393	107,827	23,586	158,836	402,811	64.0	226,784	62,258	197,804	137,991
Pittsburg, Shawmut & Northern	Jan.	190	99,246	.....	99,945	20,296	23,759	1,100	51,942	103,120	103.2	—3,175	6,909	—16,993	1,653
Reading	Jan.	1,372	7,918,667	891,893	9,205,045	1,163,232	1,966,371	87,550	3,443,002	6,872,020	74.7	2,333,025	1,208,159	1,092,332	1,047,507
Richmond, Fredericksburg & Potomac	Jan.	118	1,466,840	1,256,095	2,958,867	242,391	347,919	15,086	875,369	1,595,541	53.9	1,363,326	1,010,318	208,504	307,375
Rutland	Jan.	407	195,778	61,597	329,637	77,899	93,552	12,362	235,834	435,895	132.2	—106,258	29,065	—137,382	—37,458
St. Louis-San Francisco	Jan.	4,647	7,101,769	1,772,654	9,622,381	1,248,122	1,710,662	172,616	3,088,257	6,578,664	68.4	3,043,717	1,678,825	1,412,924	1,659,109
St. Louis, San Francisco & Texas	Jan.	159	250,134	29,527	289,479	34,922	33,641	10,697	107,437	194,474	67.18	95,005	51,909	19,413	62,062
St. Louis Southwestern Lines	Jan.	1,607	5,734,851	326,735	6,222,050	609,118	632,503	103,142	1,374,135	2,857,818	45.9	3,364,232	2,133,201	923,010	631,343
Seaboard Air Line	Jan.	4,173	7,545,418	3,650,371	11,993,728	1,421,450	1,795,768	238,069	3,580,770	7,538,865	62.9	4,454,863	2,225,000	1,787,741	1,897,310
Southern Railway	Jan.	6,505	16,092,429	5,056,126	22,519,462	2,666,568	3,506,773	260,784	6,638,973	13,767,661	61.1	8,751,801	5,768,197	2,578,525	2,665,996
Alabama Great Southern	Jan.	315	1,425,103	595,561	2,178,009	204,427	317,539	29,299	558,460	1,210,343	55.6	967,666	688,118	234,765	175,630
Cincinnati, New Orleans & Texas Pacific	Jan.	337	2,239,029	596,763	3,023,432	325,891	691,507	40,622	809,125	1,980,416	65.5	1,043,016	727,008	381,840	341,988
Georgia Southern & Florida	Jan.	397	295,739	235,663	590,995	73,297	70,876	2,661	169,078	335,233	56.7	255,762	150,108	70,195	59,080
New Orleans & Northeastern	Jan.	204	916,813	238,271	1,235,698	131,001	130,355	15,198	238,133	582,274	47.1	653,424	445,422	155,050	71,630
Southern Pacific	Jan.	8,247	28,126,159	8,468,642	40,454,801	5,680,267	7,883,732	652,017	13,046,379	29,439,583	72.8	11,015,218	6,557,295	2,953,189	3,646,334
Texas & New Orleans	Jan.	4,333	7,901,709	2,053,160	10,546,501	1,500,372	1,486,462	163,866	2,935,716	6,474,339	61.4	4,072,162	2,419,594	1,117,820	1,537,709
Spokane, Portland & Seattle	Jan.	944	1,896,800	176,406	2,197,944	477,332	225,516	14,085	682,123	1,469,926	66.9	728,018	225,878	332,908	31,419
Tennessee Central	Jan.	286	288,074	78,664	384,267	59,480	66,153	6,754	132,642	280,285	72.9	103,982	45,058	42,541	81,551
Texas & Pacific	Jan.	1,884	4,788,360	1,646,338	6,984,974	811,039	920,114	110,830	1,652,055	3,773,040	54.0	3,211,934	2,239,867	754,367	549,521
Texas Mexican	Jan.	162	124,719	1,222	144,338	193,416	22,156	3,810	41,928	270,534	187.4	—126,196	—78,999	—53,271	—187,594
Toledo, Peoria & Western	Jan.	239	421,915	Dr. 84	424,794	33,648	24,875	25,570	89,472	187,833	44.2	236,961	20,046	197,603	225,046
Union Pacific System	Jan.	9,781	29,221,718	7,203,670	39,778,051	4,590,285	7,876,302	613,561	11,762,451	26,634,211	67.0	13,143,840	9,461,637	2,844,205	2,362,464
Utah	Jan.	111	118,041	.....	118,087	14,546	35,088	631	34,814	89,505	75.8	28,582	16,847	17,097	14,669
Virginian	Jan.	657	2,541,445	8,320	2,639,035	271,741	702,660	27,086	574,129	1,633,832	61.9	1,005,203	531,310	579,608	621,604
Wabash	Jan.	2,393	6,349,727	880,321	7,663,656	868,353	1,061,864	183,139	2,653,666	5,033,386	65.7	2,630,270	1,584,775	705,345	746,841
Ann Arbor	Jan.	294	450,797	9,403	468,141	58,632	88,990	16,995	220,392	398,601	85.1	69,540	37,283	30,986	59,653
Western Maryland	Jan.	840	2,971,048	30,355	3,108,287	358,175	636,595	45,845	825,654	1,965,625	63.2	1,142,662	605,000	585,824	751,950
Western Pacific	Jan.	1,195	4,171,488	511,230	4,821,152	569,131	685,398	90,075	1,271,947	2,791,123	57.9	2,030,029	1,276,313	591,716	554,329
Wheeling & Lake Erie	Jan.	507	2,136,835	20	2,189,232	191,464	389,624	42,356	654,251	1,329,241	60.7	859,991	779,434	283,382	241,578
Wisconsin Central	Jan.	1,130	1,369,618	69,291	1,579,483	187,761	312,152	40,004	698,156	1,295,612	82.0	283,871	124,433	111,047	162,616

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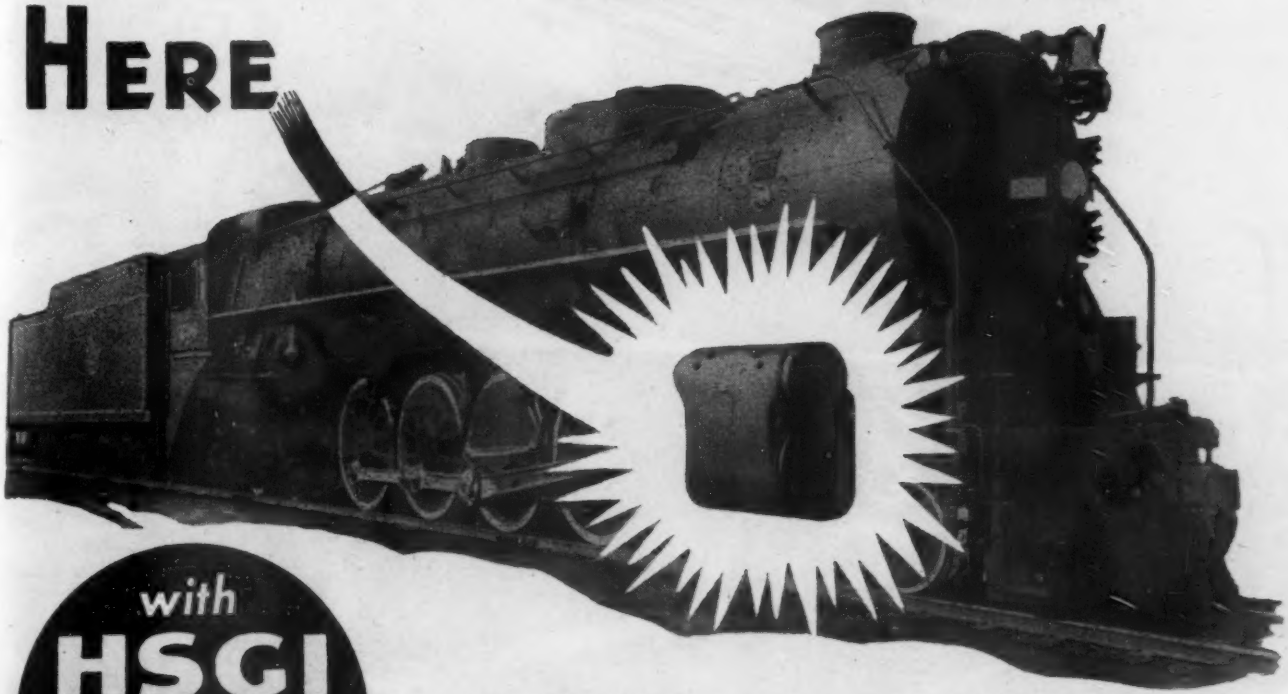

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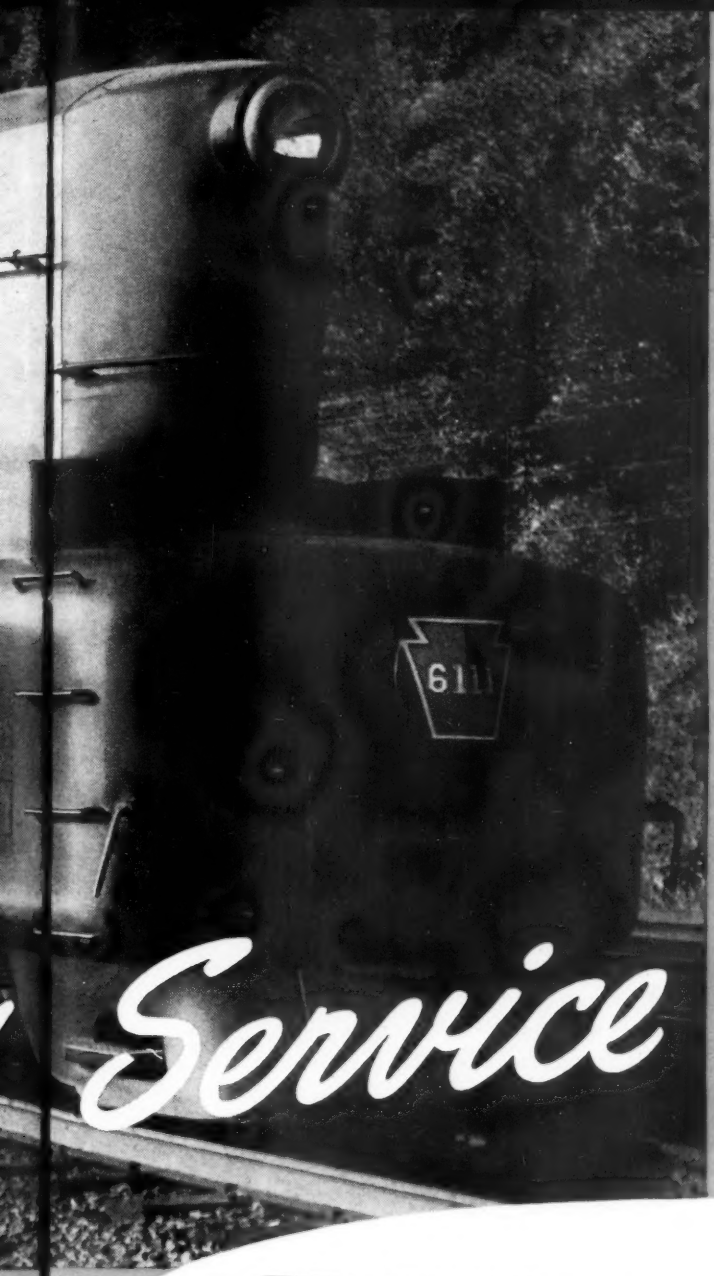

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ADVANTAGES

1—SHORT PISTON STROKE
results in lower piston speed and provides for higher mean effective pressure in cylinders at a given locomotive speed.

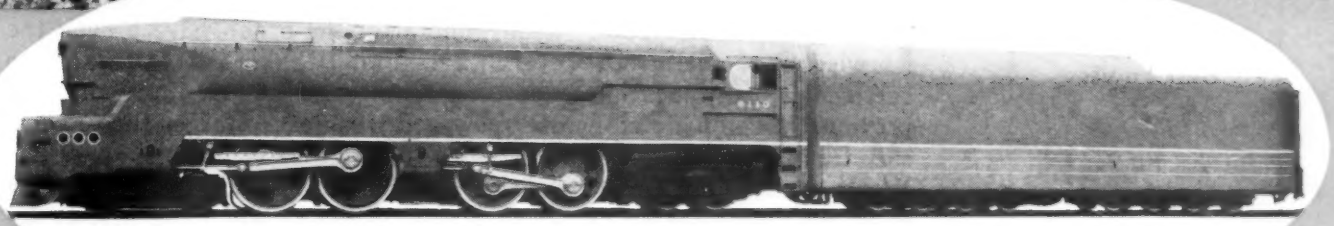
2—LOW PISTON LOAD
results naturally from the fact that cylinders are small. This makes lighter machinery construction possible and permits better design at main and main side crank pin bearings.

3—SIMPLE ROD ARRANGEMENT
because one set of rods acts on only two instead of four or more pairs of coupled wheels.

4—LOW MACHINE FRICTION
is achieved by dividing drivers into two groups and by universal use of roller bearings. This means increased power at the drawbar.

5—LARGE STEAM PORTS
in relation to cylinder volume, which are provided by poppet-valves, permit the more efficient use of steam. This means better performance at all speeds with outstanding advantages at high speeds.

6—LOW MAINTENANCE
is inherent because reciprocating and revolving parts are light, piston thrust is low and rod arrangement simple.



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- NO WASTE THRU OVER-POWER
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IT'S a matter of record. Roads, one after the other, have proven the wisdom of putting DAVENPORT Lighter DIESEL SWITCHERS into service on many locations where switching and branch line work had previously been handled by over-powered steamers or larger-than-necessary Diesel-Electrics.

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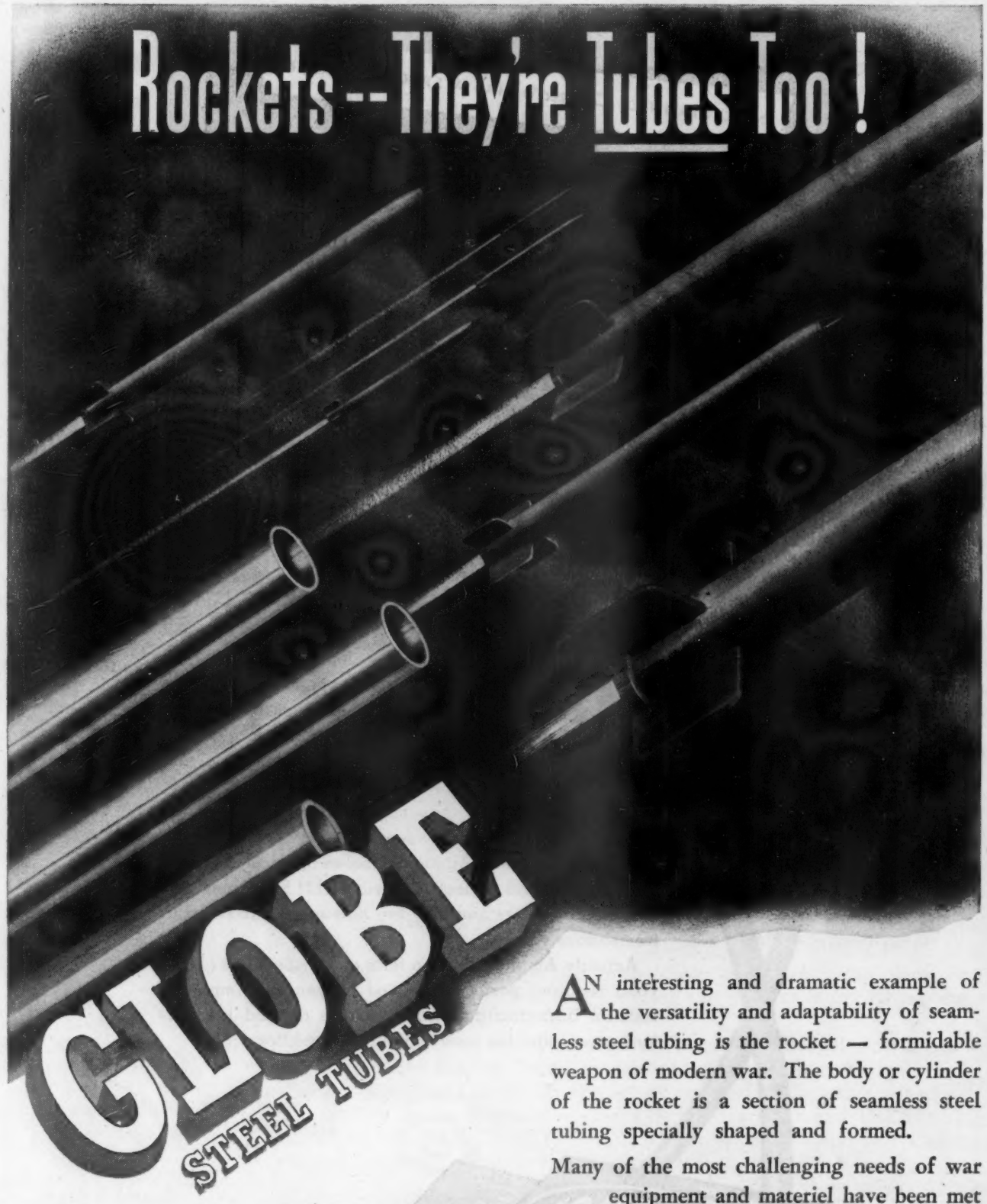

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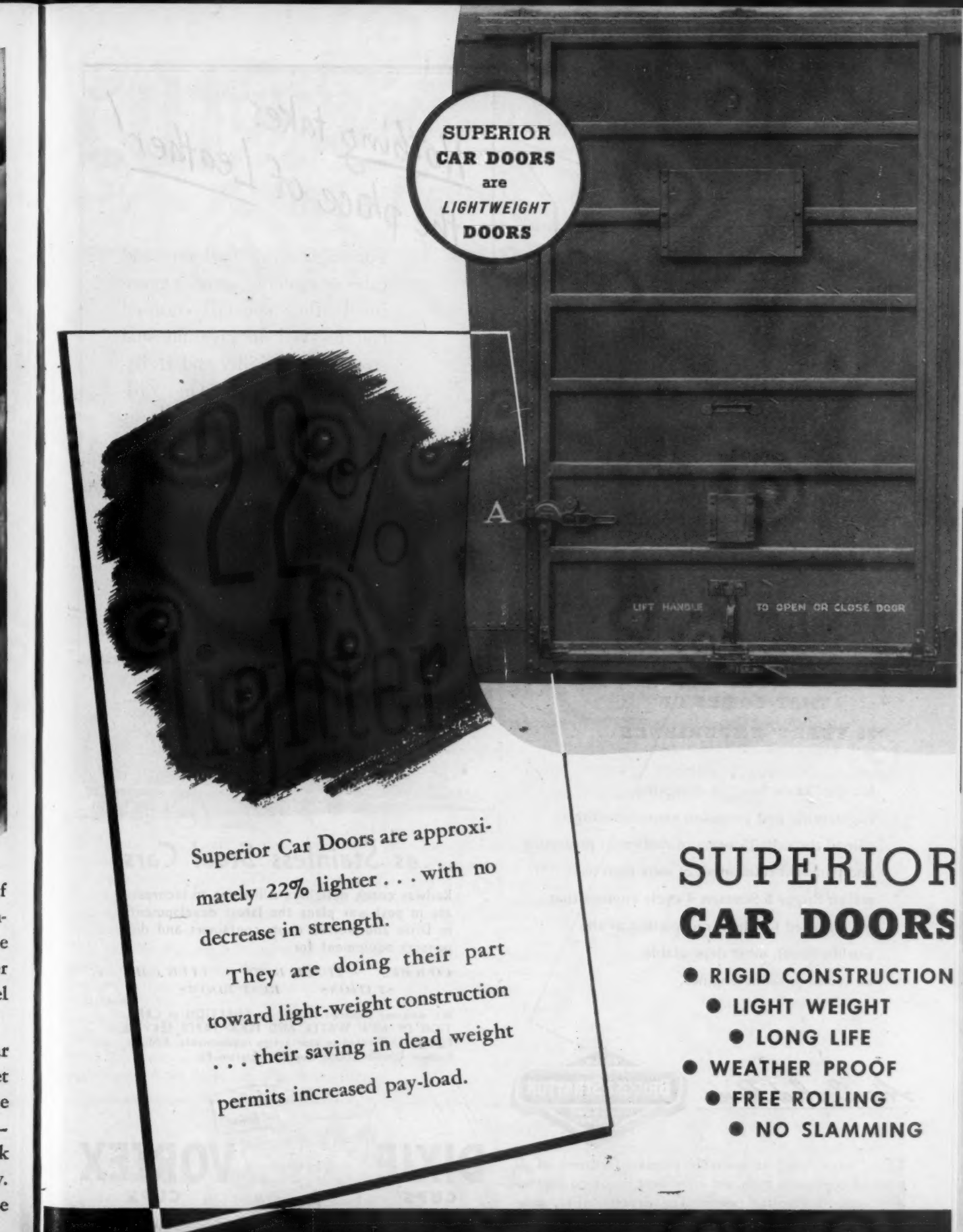

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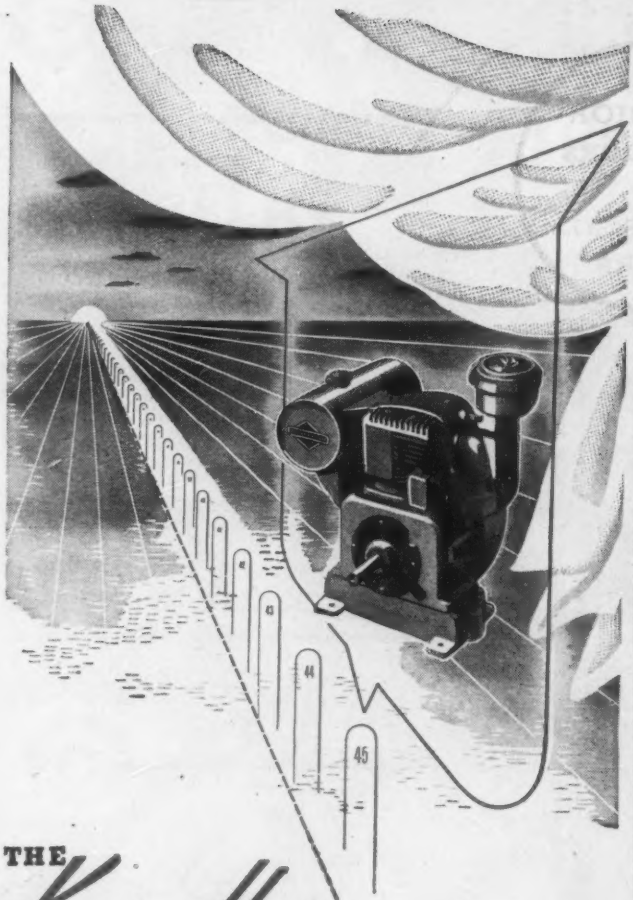

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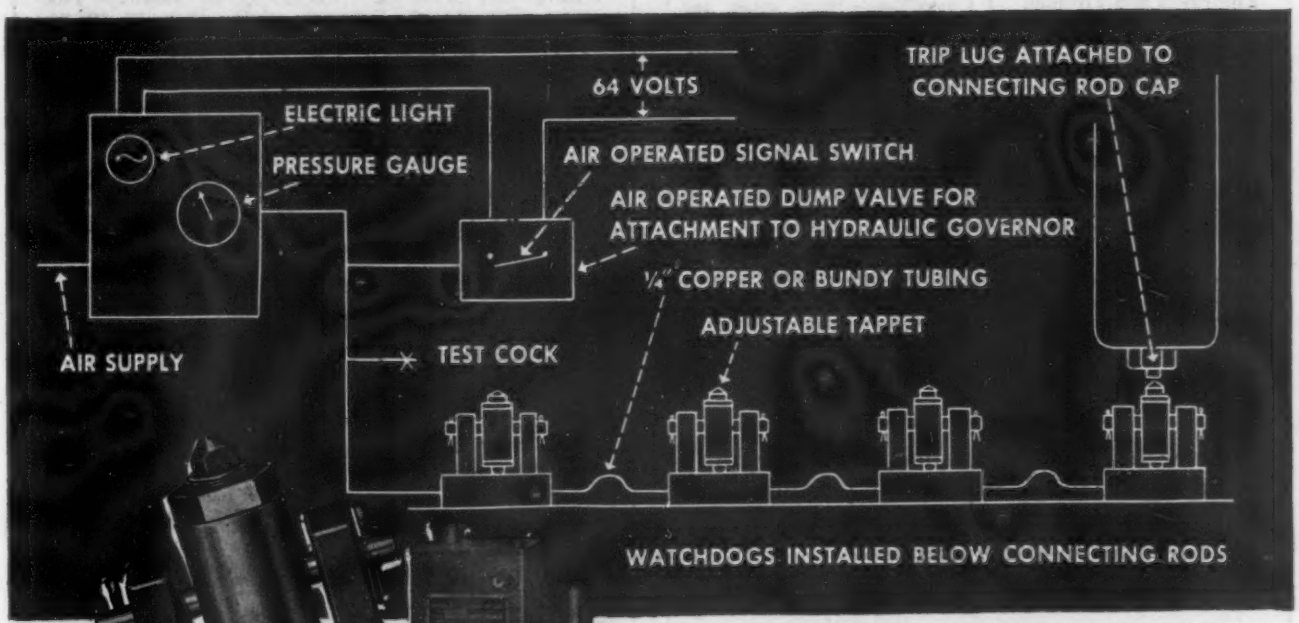

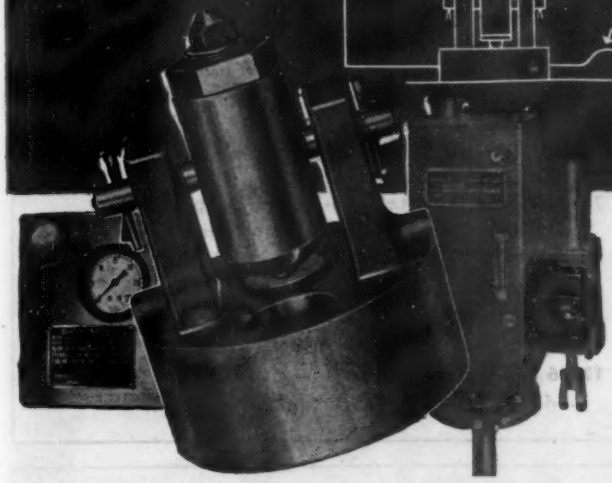

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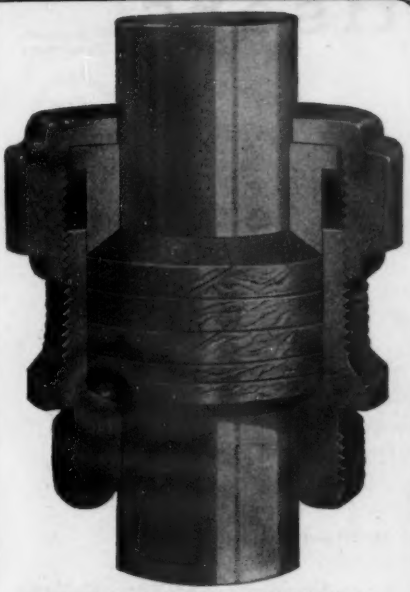

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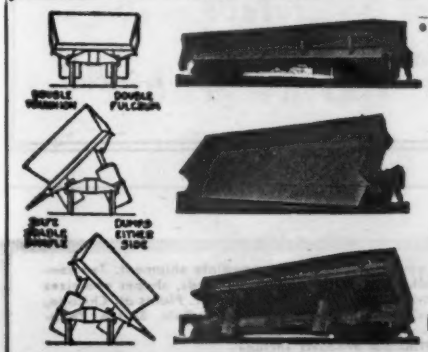

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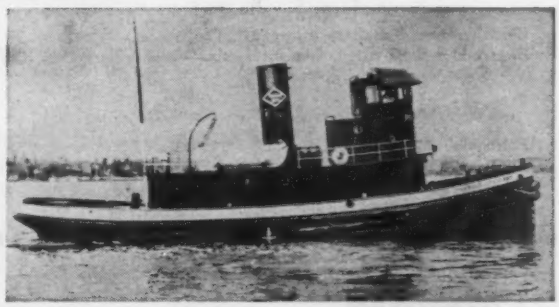

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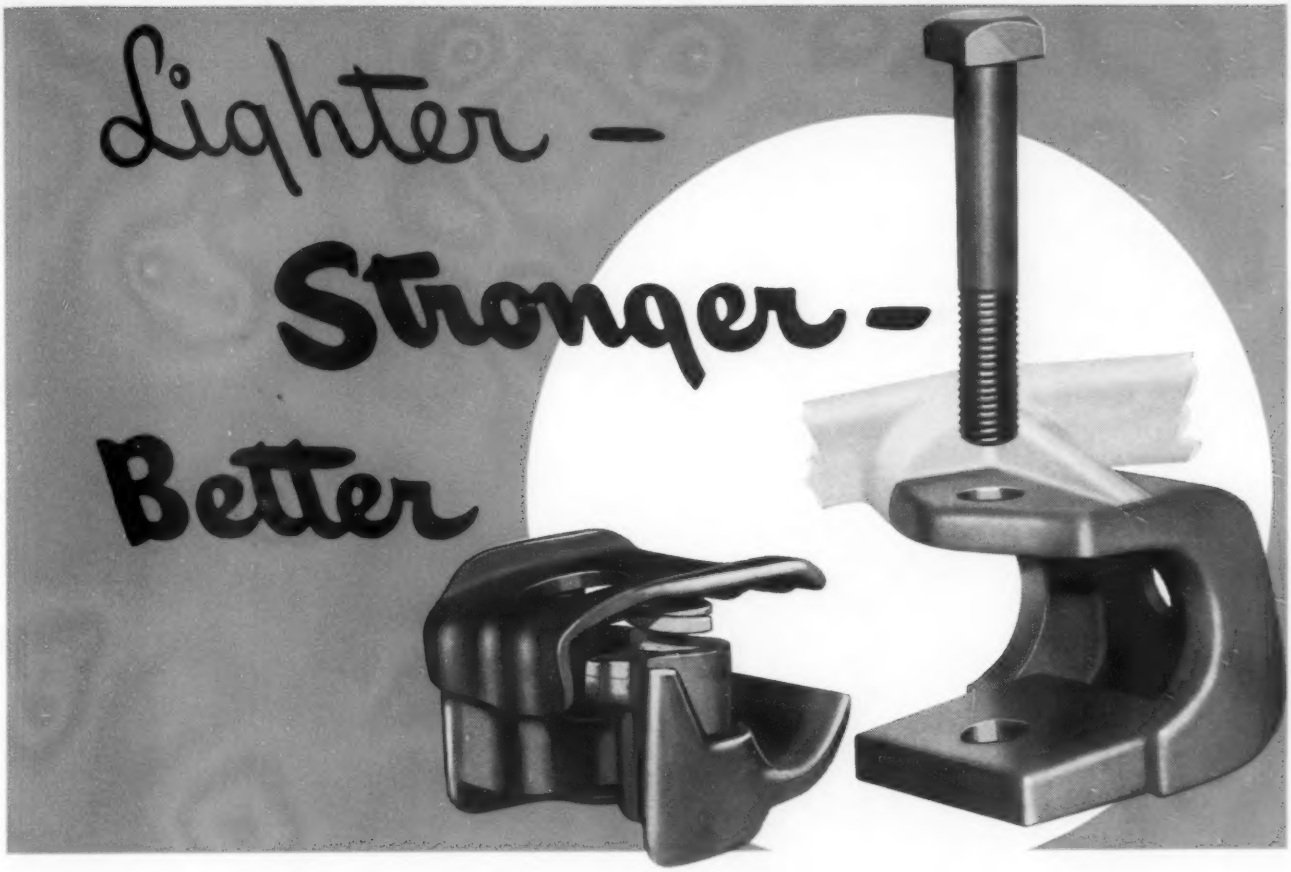

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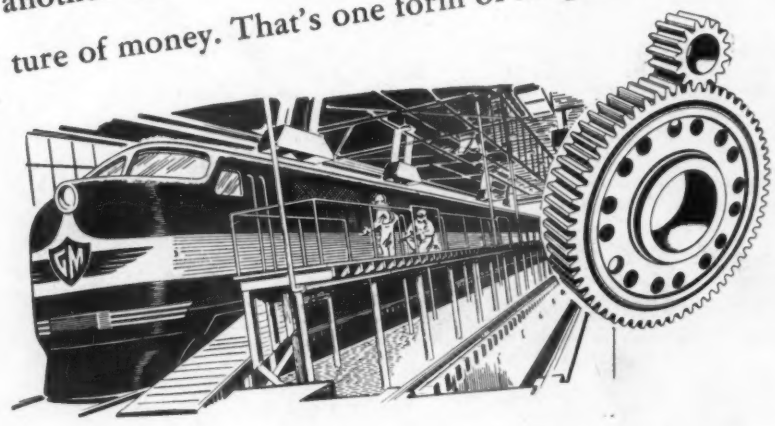
You can purchase a General Motors Diesel locomotive for one type of road service. Then, by a change of gear ratio, adapt it to another class of service at no great expenditure of money. That's one form of adaptability.



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